

# Bamboo Growing for the South

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The growing of bamboo in the warmer sections of the United States, where the climate is moist, and the land rich, should be one of the major agricultural pursuits; for bamboo wood is adaptable to very many uses, from building houses to conversion into paper, and due to its rapid growth and heavy yield per acre, is destined to replace to a large extent the native timber of the South.

Bamboo not only grows well in the bottom lands that will produce good crops of sugar-cane, sorghum, corn, and similar crops, but is far more remunerative per acre over a long term of years than any crop which can be grown on such lands.

Prior to World War 2, all bamboo used in the United States and Europe was imported from the Orient. Since this trade has been cut off by lack of shipping space, there has been a great shortage of bamboo and bamboo material, and the supply of this valuable wood has dwindled to nothing.

Bamboo may be divided roughly into two types: those which develop the new growth from underground root stalks or rhizomes (these spread rapidly), and those which grow in compact clumps and which spread slowly.

A good many years ago I, in association with the Division of Plant Exploration and Introduction of the U. S. Department of Agriculture, became interested in trial plantings of bamboo at Avery Island, Louisiana.

The first planting made here consisted of five varieties of the running type belonging to the *Phyllostachys* group, and two varieties of the bunch bamboo belonging to the *Dendrocalamus* group. These plantings were put

in for me by Dr. H. F. Schultz of the Division of Plant Exploration and Introduction in April 1910. By careful attention, all of the *Phyllostachys* group thrived and increased rapidly. The two plantings of *Dendrocalamus* were not hardy, and could not withstand our winter cold, as they made their growth in the late summer and were still soft when freezing weather came on, while the *Phyllostachys* group made their growth in the early spring (late March and April) and the culms were fully matured before the Fall.

All of the *Dendrocalamus* are what as known as "bunch growing" bamboos, while the *Phyllostachys* group and the varieties closely allied to it are rhizomatus in their growth, the new growth developing from strong underground roots radiating from the parent plant parallel to the surface of the ground. The rhizomes, which make their growth during mid-summer and early Fall, are heavy, short-jointed underground runners, often branching underground. At irregular intervals along these runners or rhizomes are eyes from which the new stalk or culm springs when the warm weather of Spring arrives.

The bud from which the new bamboo culm is to grow appears on the side of the rhizome as a small, hard swelling, composed of overlapping sheaths. As the warm weather of Spring comes on, this bud begins to lengthen, and the sheath bases begin to draw away from one another, and the bud expands into a compact upright growth until its point pierces the ground. These sheaths fit over each other like the shucks over an ear of corn, and the elongation takes place

very much in the same manner as when a telescope is withdrawn section by section.

The new culm first makes its appearance above ground as a sharp point, and develops slowly upward for the first few days after its appearance. An interesting feature of the bamboo's growth is that the entire length of the cane is compressed into the sprout when it first makes its appearance above ground, the elongation being from the bottom up; that is, the bottom joints or internodes elongate much more rapidly than those above, and only slow down and cease growing when they have reached the length to which nature intended they should grow. There is no increase in the girth of the bamboo culm after it appears above ground, but the culm elongates joint by joint until it reaches its maximum height. This elongation becomes more rapid as the culm gets higher; is slow for the first two or three feet, but the growth from then on is exceedingly rapid in height until maturity is reached. The timber bamboo, for instance, when growing from mature rhizomes, makes its complete growth, which may be as much as fifty-five feet, in six weeks; and this is about the average time in which all bamboo shoots reach maximum height.

According to my observation, bamboo is the fastest growing plant known. A culm of *Phyllostachys bambusoides* or *Phyllostachys edulis* that will measure four inches through at the base will make an average growth in a normal season of 18 inches in twenty-four hours, attaining its greatest growth during the warm part of the day. Maximum growth, of course, depends not only on proper temperature, but the proper amount of moisture in the atmosphere and in the ground, and a suitable amount of plant food to produce normal growth.

The varieties of bamboo which can be grown satisfactorily in the area bordering the Atlantic Ocean from Savannah south, and extending all along the Gulf Coast inland to the point where the temperature in March does not drop below a couple of degrees of ice, are many. I have growing in my experimental gardens in Louisiana sixty-four varieties that are entirely hardy, and which have never been hurt by temperatures that frequently reach 15 degrees Fahrenheit. Some of these varieties are of the giant type, reaching a height of sixty feet or more, and suitable for many uses in construction where timber of moderate strength is used, other varieties are small in stature, some reaching a height not exceeding 12 inches, but making such a compact ground cover and spreading so rapidly that their foliage which is green and succulent all winter furnishes a wonderful winter pasture for live stock.

In growing the *Phyllostachys* group of bamboos, it is advisable to cultivate the land deeply for one summer previous to setting out the plants. The ground should carry a cover-crop of some leguminous vegetation during the summer, all of which should be plowed under deeply in the Fall.

The planting is best set out in rows eight feet apart, not later than February 1st, in order that they may become well established before the spring growth starts in March. The earth between the rows should be kept clean throughout the first summer by frequent shallow cultivations or planted with a cover-crop between the rows of some sort of clover or other low-growing legume, which will not shade the bamboo plants themselves, but will keep the ground mellow and free from weeds and grass, and save cultivation.

If the season has been satisfactory for root growth, the rhizomes from the plants put down in February, from



*Timber Bamboo (Phyllostachys bambusoides) ten years old, at Avery Island, Louisiana.*

which the new plants are to sprout, should completely tie across the eight foot rows by the first of August. There will be little or no new growth during the first spring, unless there are some

strong rhizomes on which there are growing buds on the plants when they are set out, but the following Spring; that is, one year after the initial planting, there will be a thick growth of

young culms possibly completely covering the space planted. When this growth has been accomplished, no other cultivation is necessary, but if there should be patches of weeds that have come up along the new shoots, they should be cut out, and in late February or early March a liberal application of Nitrate of Soda at the rate of not less than 300 lbs. to the acre be broadcast and lightly raked in. Bamboo, being a giant grass, is a rank feeder, and Nitrate is very necessary for its satisfactory development.

Other than the application of Nitrate, a fertilizer composed of:

- 3 parts Superphosphate
- 1 part Ammonium Sulphate
- 1 part Calcium Sulphate

should be broadcast and raked into the ground three times during the year. The first application should be in February, the next in April, and the last in June. If this system of fertilization is followed, bamboo will not only grow rapidly, but will attain its maximum size in a very much shorter time than if it is allowed to develop only from the natural fertility of the soil.

The third year after the bamboo plants are set, a fairly liberal cutting can be made of canes measuring  $\frac{3}{4}$  of an inch at the base and less, suitable for small fishing poles, plant-stakes and other uses where a small cane is required. Not more than one-third of the standing canes should be cut in any year, as a cutting greater than this will reduce the next spring's growth, and tend to reduce the size of the new canes. By experience, I have learned if more than one-third of a stand of bamboo is cut in any one year, considerable damage is done to those left standing, and succeeding growth is scanty. Also, if the young immature canes are cut, sap will flow from the cut butts and great damage be done

to the rhizomes from which the cut growth grew.

If the bamboo planting is handled in the manner herein prescribed, (referring, of course, to the *Phyllostachys* group), the maximum size culms; that is, canes with a diameter of three to four inches and larger, and a height of forty-five to sixty-five feet may be expected. It is safer, however, not to expect canes of this size under ten or twelve years of careful growth management. From that time on, however, the bamboo planting will produce maximum canes yearly, without limit, until the planting has reached an age of thirty years or more, then inflorescence begins and seed develops. This stage will continue for two or three years, after which the entire planting will die, but new culms will arise from the outside rhizomes which can be used for planting new areas. It is of interest to state here that the very considerable planting which I made on Avery Island in April 1910 has not yet gone to seed, and has been producing each year a maximum number of culms.

It is also of interest to note that if the land surrounding the *Phyllostachys* bamboo forest is plowed in winter, and a good bed of loose soil is produced for ten to twelve feet outside of the borders of the planting, the entire area will be filled with new rhizomes by the first of August and the bamboo planting will be increased by this area yearly.

The foregoing comments have dealt with the *Phyllostachys* Bamboos, as this group are by far the most valuable for general use, but the *Bambusas* or clump-forming bamboos are many and very well adapted for growing in the South, and for some uses are equal in value to the rhizomatus types.

Clump bamboo develops from the original plant by shoots from the base of the original plant, and this growth



*Twelve year old plants of Bambusa argentea and Bambusa argentea striata, growing at Avery Island, Louisiana.*

is about equal from all sides, so that there is built up a compact bunch of culms growing much more closely together than those of the running type. The uses for the bunch type of bamboo

are almost as varied as are the running type uses, but the individual canes do not grow as large.

The extremely rapid growth of bamboo and its many uses make it a "must"



*Phyllostachys edulis*, showing new culms. Planting nine years old.

for the areas of the South where it will grow satisfactorily.

Bamboo is destined to take the place of Southern Pine for the production of paper, as it is rapid in its growth, and its growth is continuous year by year, and although the canes do not reach

full hardness and durability until their third year of growth, if scientifically cut, a bamboo forest will produce more pulpwood per acre per year than any other plant known.

Avery Island, La.

Nov. 15, 1944.

# The Story of *Camellia Reticulata*

ROBERT CASAMAJOR

While visiting the garden of Victor Reiter, Jr., in San Francisco in April 1942, I noticed a gorgeous flower on a small shrub in the distance and on inquiring what it was Mr. Reiter informed me that it was *Camellia reticulata*. Although I had heard of this rare plant for years, I had never seen it, and the foliage is so different from the familiar *C. japonica* that I would never have recognized it as a camellia.

Naturally, I immediately wanted to own a plant, and on finding it could not be secured from Mr. Reiter, I tried elsewhere, only to discover that it just wasn't for sale anywhere. This fact rather intrigued me, so I began a search, which has led into many places and experiences.

I soon learned that the predominant cause of its scarcity was the fact that no one has been able to get it to strike roots from a cutting, though much wood has been lost in the attempt. Therefore it must be propagated by grafts and even these are tricky, compared to *C. japonica*.

I further found a great atmosphere of secrecy about it, wherever I inquired, and although several people owned it, they just didn't talk about it and much less want to show it to you.

It soon became apparent that nearly all of the existing plants in California were raised from scions secured from a large plant growing in the Botanic Gardens at the University of California in Berkeley. Therefore it seemed proper that if I wanted to learn more of *C. reticulata* I had better start there. While my visit profited me very little in the line of information, I at least saw a magnificent specimen, carefully housed, in a lath house, under lock and key. I would estimate this plant

to be ten feet high and six feet across and when I saw it in December 1943, I guess it had at least 400 nice fat flower buds on it. I was a bit amazed, however, when no one there could tell me where the plant had been secured. This was disappointing because I had hoped its history and habitat would be on record.

It was hinted to me, however, that there was doubt as to it being a true species and further doubt as to whether it had ever made viable pollen, or fully developed stigmas.

One interesting fact was offered from the University and that was, that when the plant was small it produced larger flowers than it has done in later years and I was told that some blooms exceeded nine inches in diameter.

My search next led me to the Huntington Library in San Marino, California, and there with the assistance of William Hertrich, Curator of the Huntington Botanic Garden, and some articles on the subject collected by Mrs. Carlo Galli of South Pasadena, California, the story gradually unfolded.

It appears from the record that in 1820 a Captain Richard Rawes brought to England, in his East India Merchantman, a plant of a fine *Camellia*, which he secured in Canton, China and gave it to his friend Thomas Carey Palmer of Bromley, Kent. Mr. Palmer grew it in his conservatory and it bloomed in the Spring of 1826. It was given the name of Captain Rawes *Camellia* and in the Botanical Register of July 1, 1827, No. 1078, Vol. XIII, it was identified by John Lindley, an English Botanist, as *Camellia reticulata*. In describing the plant he said: "We conceive there can be no doubt of this being specifically distinct from

*C. japonica*, from which it is distinguished by its rigid, flat strongly reticulated leaves, and also by its silky ovary. The flowers also have a different aspect, the petals are much undulated, and irregularly and loosely arranged, with none of the compactness and regularity for which *C. japonica* is so much admired.

"The *C. reticulata* has the habit of *C. japonica*. The leaves are rigid, oblong, acuminate at each end, serrated, flat, not shining, and reticulated with deeply sunken veins. Flowers very large, bright clear purple, with the appearance of a Peony. Calyx imbricated, 5 leaved, more or less stained with purple. Petals 17-18 somewhat repand, wavy, generally entire, loosely arranged. Stamens much shorter than the petals, at the base irregularly monadelphous in several rows, the minor ones rather separate from the others, they are often divided into several bundles, which are placed opposite the inner petals. Ovary roundish, silky, 4-celled, with several distichous ovules. Style, 4-fld smooth. Stigmata simple. The style is occasionally 2 or 3-fld, and the ovary 2 or 3-celled."

After this careful description he goes on at great length to make his point that it is a new species and says that although one of the fundamental qualifications of a species is that it will reproduce itself when self-pollinized he still considers this plant to be a distinct species. While he does not say that this plant did not set seed, he does imply that it had not done so.

The color plate accompanying this description was not drawn from the plant brought in by Captain Rawes, and bloomed by Palmer, but from another plant owned by the Royal Horticultural Society brought to England in 1824 by John Dampier Parks in his East Indiaman, the Lowther Castle.

Five months later the Curtis Botanical Magazine on December 1, 1827, No. 2784, published another color plate of *C. reticulata* and this one was from a drawing by Miss Curtis of Captain Rawes' plant. In telling about the flower Mr. Curtis says: "Not having myself had the opportunity of seeing the plant I adopt Mr. Lindley's suggestion of its being a new species," and he then quotes the Lindley description given above.

In this color plate there are drawings of a seed capsule and section, and seeds alone, but a note says this: "Representations of capsule and section are from the Warratah Camellia (t. 1654) and seeds from the single red (t. 42)." So that once again we have the implication that the plant did not set seed, else its own seed and capsule would have been shown and not that of another plant.

A comparison of these two color plates shows that the Captain Rawes Camellia in the Botanical Magazine is six inches in diameter and a clear rose pink color, while the plate in the Botanical Register is five inches in diameter, and a trifle darker. The form of the two flowers is apparently the same.

The next reference found was in Paxton's Magazine of Botany, ten years later, in Vol. 3, 1836-37, Page 101, which shows a color plate with a flower 7½ inches in diameter and very similar in form and color to the plate in Botanical Magazine of December 1, 1827, No. 2784. There is no new information in the accompanying article however.

We then move ahead twenty years to April 1, 1857 and in the Botanical Magazine, No. 4976 there is shown a plate of *C. reticulata flore-pleno*, a double form, and quite different from the earlier drawings. This plant was



*Captain Razves' Camellia, identified by John Lindley in 1827 as Camellia reticulata. Plate 2784, Curtis Botanical Magazine 1827.*

sent to England by Robert Fortune, a Scotch botanist, who had been sent to China by the Royal Horticultural Society to collect plants, and it is believed that he secured it from a man by the name of Reeves, who was in the employ of the East India Company in

Canton and used to gather choice plants from the gardens of Canton and send them to England by the various sea-captains, who came to the port. There is no evidence that he did any collecting of plants or seeds in their native haunts. It therefore appears that the

so-called double form of *C. reticulata* is either a natural or horticultural hybrid.

A comparison of this color plate with one published by Verschaffelt, of which Mrs. Verne O. McCaskill of Pasadena, California, has a copy, and to whom I am indebted for a view of it, indicates that the two were probably made from flowers from the same plant. In one, the flower is 5 inches across and the other 5½ inches, but the form is identical. It has about twice as many petals as the one brought in by Captain Rawes, is more formal, imbricated and shows the stamens prominently. The edges of some of the petals fade to nearly white.

In the article, in the Botanical Magazine, accompanying this drawing, is a story of a fine plant of Captain Rawes' Camellia growing in the conservatory of William Byam Martin, Bank Grove, near Kingston, Surrey, which was 13 feet high, 16 feet spread, and had a circumference of 50 feet. For the health of the plant in October 1848, it was necessary to remove 2,600 buds and when it bloomed in April 1849, it had 2,000 flowers, each one 8 inches across.

We now jump nearly 80 years to the Botanical Magazine of May 13, 1935 t. 9397 to find after 108 years that Captain Rawes' Camellia was not the true species of *C. reticulata* at all and that John Lindley was probably in error in identifying it as the true species.

Botanical Magazine in the above numbered color-plate and accompanying article states: "For more than a century the species has been known only in the double or semi-double flowered garden form and until 1912 no wild material had ever been collected that could be definitely connected with the garden form.

"In March 1932, Mr. J. C. Williams

of Caerhays Castle, Cornwall, sent us specimens of a Camellia raised from seed collected by Forrest (No. 25352), which had just come into flower with him, and from this material the present plate was prepared. The plant was grown under the name *C. speciosa*, but there is not the slightest doubt that it is really *C. reticulata*, and examination of Forrest's field specimens, in the Kew Herbarium, reveal a number of sheets, which the late Dr. O. Stapf was able to identify with *C. reticulata*. All were obtained in the hills around Tengyueh (Western Yunnan), where Forrest found the plant growing in scrub, thickets and open pine forest at altitudes of 1830-2750 meters. He first collected it in 1912 (Nos. 7662, 9305), and subsequently in 1913 (No. 9715), 1924 (No. 25352) and 1925 (No. 27165), and sent home seed from which plants have been raised. Thus, after more than a hundred years, the wild form of the species has at last been discovered and introduced into cultivation."

It is described as a tree up to 10.5 meters high, loosely branched with greyish bark, and the flower as having 5 or 6 petals. In the plate, however, there are apparently 10 petals and the open flower is 3½ inches across. The color is a clear rose showing many stamens. The description further states that the flowers appear singly on the twigs in the axils of the uppermost leaves. This is also a characteristic of the plant at the University of California.

Victor Reiter, Jr., has informed me that the specimen at the University was one of four, which were imported by Golden Gate Park, from Hillier & Sons of Winchester, England, of which he received one and the Park kept two, which were later lost. He also stated that he has another plant that he se-



*Camellia reticulata flore-pleno.* The double form sent to England by Robert Fortune from Canton, China. Plate 4976, Botanical Magazine 1857.

cured from Canada, the flower of which is identical with the original one.

George Petersen of Chico, California, informed me that he had a plant in bud that was killed by the cold spell in 1933, so it was apparently more tender than *C. japonica*. His stock was se-

cured from the University of California.

If the drawing and colors of Captain Rawes Camellia, as shown in the Botanical Magazine, are correct, it seems apparent that the plant at the University in Berkeley and now com-

ing into circulation throughout the State of California as *C. reticulata* is identical with the specimen brought to England in 1820.

While it is true that this plant has the characteristics that distinguish *C. reticulata*, as grown from Forrest's seed (No. 25352), it also is apparent that the flowers of the two plants are different, the Captain Rawes Camellia being easily twice as large as the wild species, and more double. This would indicate that the former is a hybrid, in which one side of the cross is *C. reticulata*, or a primary hybrid of it. Hybrid vigor would thus account for the great improvement in size. There is also the possibility that it could be a mutation or "sport" of the species though this seems less likely than the hybrid theory.

At any event it is a magnificent Camellia and well worth owning if you can find some way to secure it. Botanical Magazine in 1935 says this of the species. "*C. reticulata* is quite the finest of all the Camellias and is easily recognizable by its very large rose-red flowers and large elliptic leaves with a dull upper surface and the venation clearly visible in the living state."

So far as I can learn the wild species, as collected by Forrest near the town of Tengyueh, is not now growing in the United States of America and Camellia growers would do well to attempt to secure it as well as the allied species *C. Pitardii*. If the blood of these two Camellias could be introduced into hybrids with that of several of our present fine varieties of *C. japonica* an entirely new race of fine flowers might result.

In view of the foregoing facts it appears that it is really improper nomenclature to call the plant which is now in cultivation in California *C. reticulata* and it could more properly

be designated as "Captain Rawes" or possibly "*C. reticulata* var. Captain Rawes."

When selecting a root stock on which to graft scions of this variety it is advisable to use a strong vigorous grower as there is considerable evidence that the top growth is far more vigorous than most *C. japonica* varieties and there is a possibility that this may be the reason why the University of California plant did not have such large flowers as it grew in size, in spite of the fact that it was fertilized regularly. In other words the root action did not keep pace with the top growth. It would be interesting to try it on the wild species of *C. reticulata* itself, if seeds could be obtained. Since this tree grows to 32 feet it should have a strong root system. That this fact was observed many years ago is evidenced by an article in an old copy of the "Gardeners Chronicle," of London, to which Mr. Hertrich called my attention, in which the writer deplored the fact that some way could not be found to get it to grow on its own roots.

Mr. O. E. Hopper of Oakland, California, has informed me that he has a plant of *C. reticulata* which he secured from Robert Veitch in Surrey, but a color-plate, that he sent me of a flower from it, looks to me quite different in color and form from the one at the University of California.

In any event there appear to be several flower forms from plants, which have the characteristic leaf of *C. reticulata*, as well as its habit of making but one growth a year, and that the color and number of petals is in considerable variance. Until someone has had an opportunity to observe several of them growing under the same conditions, along with the wild species as collected by Forrest, it will be difficult to clarify the nomenclature for this monarch of all the Camellias.



*Camellia reticulata*. The wild species grown in England from seed collected by Forrest near Tengyueh, in western Yunnan, China. Plate 9397, Curtis Botanical Magazine, 1935. By special permission of The Royal Horticultural Society, 1944.

# Lateral Inflorescences in the Bromeliaceae

MULFORD B. FOSTER

It has been generally accepted that most of the bromeliads send forth their inflorescences from the center of the main axis of the plant. The exceptions to this generalization have provided some interesting data on this subject.

One of the early known exceptions is in the epiphytic rosette type of bromeliad in the genus *Quesnelia* of the subfamily Bromelioideae. In this genus the species, *lateralis* has long been known to bloom laterally, as noted in Harms\* (1930), "Occasionally an otherwise normally vegetatively shortened shoot forms bracts and blossoms. Such accidental formations (according to Mez, p.x.) are not rare in *Quesnelia lateralis* Wawra . . ."

My observations from the living material convince me that such formations are neither accidental nor rare in *Quesnelia lateralis* although this condition is abnormal to the genus.

In 1940 my first observation of an epiphytic bromeliad sending forth its inflorescence laterally was made when I took *Quesnelia lateralis* in the Organo Mountains above Therezopolis in Brazil. I was very much surprised to find this same species also blooming from the center. I immediately examined many of these epiphytic bromeliads growing in clusters on rocks, and in the trees, and found just as many of the plants blooming from the base, (at a point below all of the leaves) as well as from the center of the main axis in the tube of the rosette. Later I learned from Dr. Lyman B. Smith, bromeliad specialist of Harvard, that this *Quesnelia* was originally named *lateralis* and at a later time also named *centralis*. At the time botanists evidently thought that they were two different species.

\*Harms translation by Dr. Lyman B. Smith.

When this phenomenon of a duplex blooming habit was recognized in the one species, the species name, *Q. centralis*, was placed in synonymy. After having this plant in cultivation four years, I have now observed that *Quesnelia lateralis* not only blooms laterally from the base, but the same plant blooms also from the center of the main axis. The lateral inflorescence appears first, and then about two months later another inflorescence may appear from the center of the same rosette.

This condition of lateral inflorescence is rarely found in bromeliads although Harms says, "another type of development can be seen in the case of *T. complanata*, and *T. multicaulis* (caespitosa) because here, after the blossoms of the main axis, new blossoming bracteate sprouts arise from the axils of the rosette leaves."

The caulescent habit of a number of the *Tillandsias* such as *T. pulchella*, *T. stricta*, *T. firmula*, *T. decomposita* and others gives the plants the appearance of having lateral inflorescences. These plants when not in flower may show several old dried inflorescences emerging laterally from the stem, not unlike the large rosette type of *D. microcalyx* as explained below. I have found the large rootless plants of *T. decomposita* with as many as ten old scape stubs protruding laterally from the twisted main stem but as in all this type of *Tillandsia* the new inflorescence appears in the main axis of the plant, to be later pushed aside when new axis leaf growth starts again.

It is not difficult to understand how such plants as these caulescent *Tillandsias* could have been described as having lateral inflorescences.



*Quesnelia lateralis.* Unusual bromeliad with a regular "freak" habit of blooming laterally from the base as well as from the center of the plant.

In considering further this phenomenon of lateral inflorescence Harms said: "Rarely the main axis regularly remains sterile and the inflorescences arise from the axils of the rosette-leaves. This is the case for example in *Greigia sphacelata* (R.&P.) Regel."

Another lateral inflorescence which is noticeable upon first examination is

in the *Disteganthus basilateralis* which like *Greigia* and *Quesnelia* is in the subfamily Bromelioideae. Harms made only a notation of this peculiar condition: "In *Disteganthus* the axis arises laterally from the rhizome (*Plagianthae* C. Koch in *Wochenschr.*, f. Gaertneri III [1860])." My examination of the plate of *Disteganthus basilateralis* Le-



*Tillandsia decomposita* with its many old scape stubs protruding laterally from the twisted main stem shows the new inflorescence appearing from the main axis of the plant. The caulescent stem often becomes over two feet in length. This fantastic tree-top epiphyte dispenses with roots, using its curly leaves in an octopus-like grasp to hold it in secure position.

maire in Fl. des Serres iii tab. 227 (1847) shows me that several inflorescences emerge simultaneously out of the base of the plant below the rosette.

While I have found at least two inflorescences on one rosette emerging at the same time from certain species of *Dyckias*, I know of no other bromeliads where this multiple inflorescence occurs regularly as a characteristic, except as noted above. Although in freak plants, having a central inflorescence, of *Aechmea Orlandiana* and *Wittmackia lingulata* I have found more than one scape emerging from the center axis of the rosette.

The genera, so far unrecorded as

regularly producing a lateral inflorescence are in the subfamily Pitcairnioideae and so far as my observation or any available data shows they are confined to *Hecktia*, *Dyckia*, *Deuterocohnia*, and *Encholirium*. These have, in common, a spiny leaf rosette form generally so similar to each other that it is almost impossible to distinguish one genus from another, even by a close observer if the inflorescence is not showing.

My observations as to the position of inflorescences in these four genera of the Pitcairnioideae group may not be entirely new. That is, Mez in his monograph pictured *Hecktia glome-*



*Dyckia frigida.* Upper portion of the plant showing position of the inflorescence which emerges from the side of this many leaved rosette.

rata on page 353 and *Dyckia remotiflora*, page 336 with the inflorescence coming from the side but in the same monograph pictured *Hecktia desmetiana*, page 359 with the inflorescence coming from the center with no comment whatsoever as to the position or variance of emergence even in the same genus. In Martius' FLORA BRASILIENSIS, *Dyckia minarum* plate No. 91 was pictured with the inflorescence coming from the side but no significance or association was attached to this condition. Baker, in his Handbook stated in the description of *Hecktia* and *Dyckia* that the peduncle was produced from the axil of one of the outer leaves of the rosette. Thus this may be no announcement of something entirely new, yet it is a recording of the fact that lateral inflorescence is a phenomenon peculiar to certain genera in the Pitcairnioidea whose main axis always remains sterile.

Whereas in *Quesnelia* and *Tillandsia* lateral inflorescence is an exception, so far as I know all of the species in *Hecktia*, *Dyckia*, *Deuterocohnia* and *Encholirium* show this lateral characteristic.

It was during August 1939 when we were collecting at Villa Velha in the state of Parana, in south Brazil, that I first observed that the inflorescence of *Dyckia frigida* (Hook. f.) came out of the side of the plant from the axils of the leaves about one quarter of the way between the center of the rosette and the base of the plant. This awakened me to the fact that not all the bromeliads bloomed as a terminal of the center or main axis of the plant. I made a photograph at once and sent this on to the Gray Herbarium with the herbarium material.

After collecting *Hecktias*, in Mexico, *Dyckias*, *Encholiriums* and *Deuterocohnias* in Brazil and noting their habits of flowering, I was quite sur-

prised when Dr. Smith informed me that little had been written about lateral inflorescences in the Bromeliaceae. No doubt this has come about because most of the observations have been made from incomplete or partial herbarium material. The genera *Dyckia*, *Hecktia*, *Encholirium* and *Deuterocohnia* are the kind of plants that almost every botanist shuns when it comes to making herbarium specimens, and it is impossible to get a complete plant of most of the species of these genera (which would show the position of the inflorescence), inside an ordinary sized press. Only a few species of these genera have been grown in cultivation and although observations have been made they evidently have not been correlated.

In the genus *Dyckia* all of the species are caulescent. Although they may vary in their branching habits there is also a variation in the manner of flowering. *Dyckia microcalyx* for example, which I found in Matto Grosso growing on rocky ledges, often shoots two spikes, each with several hundred flowers, simultaneously and within three whorls of leaves of each other. I not only observed this in its natural habitat, but I have it before me in my living plants. In two years of growth the rosette of all green leaves shows the 1942 scape, now dead of course, but near the base of the plant. The two 1943 scapes, now dead, are midway in the rosette while the two new 1944 inflorescences well formed, are at a position about one quarter to one eighth of the distance from the crown of the rosette.

*Dyckia Fosteriana*, on the other hand, blooms mid-way in the rosette, then the plant subdivides into two heads and so on until the ground is covered with a branched, caulescent bed of *Dyckias*. *Dyckia minarum*, *D. coccinea*, *D. simulans* and others have a



*Dyckia encholirioides*. A plant perhaps 50 years of age showing a branched, yucca-like trunk as it crawls over granite rocks at the edge of the Atlantic in Southern Brazil.

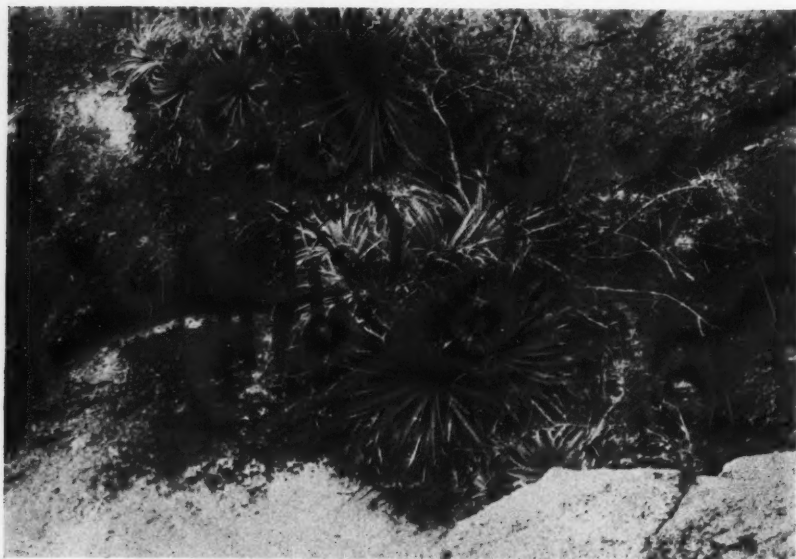
similar growth, but *D. leptostachys* shoots underground stolons and makes a vast coverage of apparently individual plants over quite some area in practically the same manner as *Pseudo-Ananas* and *Bromelia*. In all these *Dyckias* the same rosettes continue to bloom for several years, although in these types they do not form a long continuous caudex as in *D. encholirioides*.

Overlooking the Atlantic in Parana, Brazil and but a few feet above high water, on great granite rocks, I found *Dyckia encholirioides* with an old caudex over six feet in length which certainly must have been not less than 50 years of age. The plant was still vigorously blooming and putting out new roots from the underside of the caudex. *Dyckia ursina* (nov. sp.) also forms a fair sized caudex but its growth is much slower and it is more prone to

branch into several heads as it clings to the rocky crevices.

*Dyckia microcalyx* like *D. encholirioides* as well as *D. frigida* and *D. ferruginea* also form quite a considerable caudex. These species continue to grow for many years, blooming laterally and forming a single or branched caudex, not unlike a prostrate yucca.

I found the same development and caulescent growth in the *Encholiriums* and *Deuterocohnias*. *Deuterocohnia Meziana* proves to be one of the most fantastic bromeliads I have ever collected. It grows equally well on limestone rock almost at the river's edge, and high on manganese rock in the great pantanal (swamp) of Matto Grosso, and in some instances the plants develop a very long caudex when rock conditions are favorable. However, while this plant sends out lateral inflorescences they do not appear an-



By permission, Jaques Cattell Press.

*Encholirium horridum* (nov. spec.) Showing lateral inflorescence. This new species has the distinction of being the only known *Encholirium* with a branched blooming spike.

nually as in the Dyckias. This *Deuterocohnia* sends up a branched woody inflorescence four to seven feet in height which blooms over a period of several years. It seems incongruous to find a stiff succulent, spiny rosette form of a monocotyledonous plant that develops an inflorescence which resembles a woody shrub.

I know of no other bromeliad which has the incredible habit of blooming year after year from the same branched inflorescence as does this *Deuterocohnia*, and I know of no other flowering plant with such a habit. After each dry spell or at the beginning of each rainy season new buds swell and break into flower on newly formed branchlets. On one plant I found one old woody stub of a scape half an inch in diam-

eter and but a few inches in length still managing to throw out its new branchlets covered with flowers.

When I made a close examination of the six-foot inflorescence I discovered that under the outer covering of the stem there was a definite layer comparable to the cambium layer which is found in all dicotyledonous plants such as our common woody perennials. This was probably the first discovery of a cambium layer in the Bromeliad family, which is monocotyledonous. The only other recorded instance where such a condition has been noted in a monocotyledon was when, recently, a few species of the Lily family were found to have a similar characteristic.

In conclusion, I feel that my studies of the living plants point out the fact



By permission, Jaques Cattell Press.

*Deuterocohnia Meziana.* A bromeliad with the fantastic habit of sending out a tall branched lateral inflorescence which has the characteristics of a woody shrub, even a cambium layer; it blossoms from the same inflorescence for a period of several years.

that taxonomic work must not be confined to herbarium material or drawings made from these pressed plants. Very often the artist who makes the final drawings for the plate is not the observer, and therefore may place the inflorescence in the wrong position, change the shape of a plant or picture a number of features without actual knowledge. I believe I am not far wrong in assuming that most botanical drawings are made from preserved herbarium material and I am quite frank to say that the degree of success has been astonishing considering the inert condition of the plants.

When I took my first picture of a lateral inflorescence I hesitated sending the photos and observations to the herbarium. Knowing that *Dyckias* have been collected and described for so many years, I felt that it would be an unnecessary exposure of my own amateur ignorance. But now it has only assured me that all observations should be noted and recorded not only to reveal something new but to correlate the findings of others. Therefore, I feel that for a more complete taxonomic understanding there must and will be a greater effort made to study the living plants.

# Length of Blooming Period in Shrubs and Flowering Trees

STANLEY W. LEONARD

The length of time of bloom should be the most important point in deciding which shrubs or trees to plant.

In the North most all of our hardy shrubs and trees bloom only a week or ten days. If it is very hot and dry (especially in the spring) even this brief period is made shorter.

Typical examples of short season bloomers are:

Azaleas (see exception below)  
*Cornus florida*  
*Cornus mas*  
*Crataegus*  
*Cydonia*  
Flowering Cherry  
Flowering Peach  
Flowering Plum (except *P. blieriana*)  
Kalmia  
Laburnum  
Lonicera (except *Lonicera fragrantissima*)  
Magnolia (except *Magnolia glauca*)  
Malus (in variety)  
*Philadelphus coronarius*  
Rhododendron  
*Rosa hugonis*  
*Rosa spinosissima*  
Hybrid Perpetual Roses (exceptions here)  
Most Climbing Roses  
Spirea (Spring flowering types)  
Styrax  
Syringa (in variety)  
Tree Peony  
Viburnum (in variety)

Typical examples of long season bloomers are:

Althea  
Amelanchier  
*Azalea mucronulatum*  
Buddleia (in variety)  
*Cercis canadensis*

*Cornus florida rubra* (at first blooms are not very attractive but as season advances they become more beautiful)

*Daphne cneorum*  
Forsythia (in variety)  
Franklinia  
Hamamelis (in variety)  
Hibiscus (mallow marvels)  
Hydrangea  
*Lonicera fragrantissima*  
*Lonicera halleana* and climbing types of Lonicera  
Philadelphus (most French hybrids)  
*Prunus blieriana*  
Roses (Hybrid Teas)  
*Salix pentandra*  
Weigela

You may ask wherein lies the value of lists such as these. In a green garden (and many people are planting them now) one should use short season bloomers as accents and long season bloomers in large masses or design a green garden that predominates in short season bloomers but not in too great a variety.

In the case of Malus (Flowering Crabs) except for the double varieties like Bechtel, all Malus have attractive fruits that last much longer than the blooms. The fruits appear in late summer and early fall.

We definitely lack long season bloomers. It is true we have new Buddleia varieties but why couldn't hybridizers give us new and larger Altheas. Among Hybrid Tea Roses we have plenty of new varieties and in Philadelphus, Lemoine gave us many splendid varieties.

Pittsburgh, Penna.

## Some Iris Hindsights

ROBERT E. ALLEN

Characteristic of youth is the desire for independent learning. Some few years ago when I would volunteer to give my son some benefit of what knowledge and experience I had on subjects of current concern to him I would be met firmly with the concession that perhaps I was entirely right but he would not know for certain until he had found out for himself.

By this criterion amateur irisarians must all be deeply imbued with the spirit of youth, for it would be difficult to find a group, unless in the field of philately, in which there is such a penchant for the independent research and investigation of their hobby. However, many of us are reticent, or perhaps diffident, about putting our findings in the written word, for fear that they may sound amateurish or even be wrong. Only the knowledge that many original observations supported by more confirmations are required to secure scientific acceptance of a fact encourages me to make a few observations concerning some of the incidents of my career as an ardent apprentice in irisdom. What to do and what not to do must ever remain the prerogative of the individual irisarian, so, rather than attempt to be didactic or pedagogic, I shall confine my "hindsight" observations to those things relating to iris culture that I would and am now doing differently from the way in which I first attempted them.

Like many another iris lover I first became interested in irises as the result of observing their general durability, persistence and ease of culture. This was during my high school days, just before World War I, when, in moving some of my mother's iris clumps to make room for annuals that I realized

would require more care and attention, I decided to give several bushels of discarded rhizomes a chance to grow on a bare roadside bank. I planted them most hurriedly and carelessly on the sloping clay fill and gave them no care whatever thereafter, but the next summer the bank was colored sparsely and briefly with the conglomerate colors of *I. pallida*, *I. albicans*, *I. variegata* and probably some others. Last summer I saw that roadside planting for the first time since 1921 and those same irises or their descendants are still there blanketing the bank after surviving the storms, weeds neglect and enemies of nearly thirty years. Not far away in a long-deserted yard I also observed clumps of white and purple *Iris kaempferi* that, together with some nearby clumps of peony *officinalis rosea* I know to have been planted in 1900, but that have found soil and moisture conditions to their liking and so are able to still bloom bravely each year despite the choking growth of grass and weeds surrounding them.

Thus I early learned that within reasonable limits the iris has certain fool-proof qualities that appeal to the flower lover. Soon after making this observation I noticed in the advertising pages of the Strand Magazine which at that time was featuring a fiction serial recounting the marvelous time and space permutations of a mystic creature known as the Psammyad, a little advertisement offering a dozen fine new iris originations for one pound. I only remember that the address of the nursery was somewhere in Kent but I do remember that in due course after ordering I received thirteen nicely labeled plants in what I then thought was poor condition. However, they all grew and

all bloomed the next season and were quite an object of interest in the neighborhood because they were obviously so much better than the local irises. As I recall there were three different blues, a red bicolor, a cream, a plicata, two purples, an amoena, two variegatas, a pink blend and a blue-white.

I left the labels on the plants naturally enough, and equally naturally there wasn't a trace of them left the second year and the names were "disremembered." Then and there I learned that if iris are worth planting they are worth knowing and that the only way of keeping a permanent record of iris names and locations is to carefully make and preserve a planting chart, on which all subsequent movements and changes are registered with equal care. Even though two years ago I was sentimental enough to go and collect a specimen of each of the thirteen varieties which are now well distributed through the neighborhood, I have as yet been able to positively identify only Maori King as one of the thirteen. They all look like a bunch of second-rate seedlings and my only reason for collecting them was to have them serve as an illustration of thirty years of iris progress, for almost certainly some of the best modern iris I have in my garden are lineal descendants from some of those old gems of the mauve decade.

So I learned that good charts and records of iris planting are an essential to the real enjoyment of an iris garden. The best labels available may be used to easily identify irises in the garden, but a good planting chart is necessary also because irises have a way of outgrowing their labels and labels have a strange way of moving about and interchanging themselves, particularly if your visitors number among them some practical jokers.

Last season I was somewhat surprised to receive a lot of "rave" comments on Nylon from my visitors. Now Nylon is a fine iris but it had never before attracted such attention. When I next visited my garden I discovered the reason. Some waggish early visitor had interchanged the nametakes of Nylon and Prairie Sunset and the perfectly magnificent display that Prairie Sunset put on in my garden last spring is probably still credited to Nylon in the minds of many unknown visitors. So important do I now consider the subject of charting my plantings that I have two charts of most of my recent plantings—one a work sheet to take into the garden with me and the other a master sheet for the records.

Due to occupational circumstances I have had the opportunity of growing irises in Australia, Canada, several states of this country and, once, when I had no other choice, my iris garden consisted of several window-boxes in a Washington apartment and office. Iris gardening in window boxes is truly a last resort, except for some Asiatic species and their hybrids, and can be recommended only as such, but it does give one a rather intimate insight into the private lives and growing habits of the iris. It supplies convincing proof on how essential sunlight and drainage are for iris health. Rot and leafspot followed me right indoors via soil or plant borne spores I presume. A case of iris fire consumed one fine pink iris rapidly, but did not spread to the other four occupants of the box. In the absence of their natural enemies, aphids tended to run wild but were easily controlled with conventional tobacco-base sprays while the addition of a copper base proprietary controlled the leafspot just as it does in outdoor plantings.

The few diseases and insects that

trouble irises no longer worry me much for iris health is largely a matter of sanitation and prevention, plus attention. Although some plants such as Geum, Heuchera, Echscholtzia, Gypsophila and Asclepias seem fairly compatible with irises, as a general rule I prefer not to interplant companion crops in my iris beds. If a new planting seems somewhat vacant it is because the iris plants themselves are not as close together as they well might be. As far as disease and insect injury is concerned there seems to be a certain safety in numbers, for while the rot or the borer may easily wipe out one rhizome of a choice variety in a day or so, it is unlikely that a group of three or four plants will be completely killed.

So when I do observe bad attacks of leaf spot, mustard seed fungus, and the iris borer, I regard it as my own fault for having slipped on the necessary control measures. In the case of rot where weather conditions and probably other factors as yet unknown about iris metabolism are largely contributory, it is simply a matter of philosophical application of the customary but sometimes heroic remedial measures. Much has been written about the incidence and treatment of rot, but so far as I know there has been no classification of iris varieties into rot resistant, rot tolerant and rot susceptible groups. Nor do I know of any studies made of possible symbiotic relationships of irises and mycorrhiza, or of factors affecting iris metabolism. I think that iris are subject to rot only when their inherent or current resistance becomes low due to organic changes resulting from physical or chemical disturbances to their normal functioning. Be that as it may, rot occurs more frequently with my plicatas than with any other group. Some

varieties I have never seen affected with it, but some other varieties are always the first to succumb.

Some of the most robust iris I have ever seen are growing a few feet down a gravelly hillside from a manure pile back of a Virginia barn. Their growth is lush and so is that of the weeds among them. Some evidence of rot is always present among the several old varieties growing there in abandon, but no wholesale destruction. The bed sweeps around the end of the barn into a low spot where a seepage keeps the ground moist except during drought. Here the iris lead a miserable rot-ridden existence and barely survive. Too much humus and poor drainage seem to be bad as every irisarian thinks he knows. However, as regards manure itself, I use dilute manure water regularly on my iris as well as my other plants as a growth stimulant as soon as a new root system is established after transplanting, and I have never noticed any ill effect other than that the susceptible iris so treated rot just the same as the untreated ones during an extended period of dark days and continuous rain when the temperature and humidity are high and the sunlight poor. So about all I know about rot is that I don't know much and apparently I am in numerous company.

The progress of an iris addict in his chosen subject is both routine and familiar. He is first a spectator, then a novice, then a collector, then a fancier, then a specialist and finally an authority if he lasts that long. At any place along the line he may suddenly fancy himself an iris breeder and this present paper is sad proof that occasionally some otherwise sound junior member develops delusions of authority. In common with most other fanciers I imagine I made every possible error in my search for iris knowledge.

I hate to think of the number of varieties I have bought on the strength of a glowing catalog description or on some naive impulse. I also regret that there is such a bewildering flood of names and misnamed varieties on the market. I admire and applaud the efforts that are being made to curb this flood, but even at its lowest level I am afraid that there will still be more varieties introduced during a five year period than can possibly receive any substantial customer recognition. For example, 369 new names for tall bearded iris alone were registered in 1943. If as many as ten per cent of this number of these new clons of 1943 are catalogued in 1953 it will be something extraordinary in irisdom. It is true that the philatelist and stamp collector is confronted with more new stamp issues each year, but his new stamps do not cost as much on the average as new irises, neither do they require a lot of expensive ground and the cultivation and care that new irises demand.

Of the 20,000 old iris names listed in the official Iris Check List, it is doubtful if as many as 2,000 varieties are today obtainable from dealers. Many others can be obtained by correspondence with their originators but it is surprising how many irises of relatively recent introduction seem to have become extinct already. One hears talk occasionally of an iris clon "running out" and many iris gardens have had cases of apparent reversion or decadence. Although a vegetatively reproduced clon is not supposed to change except as the result of continued adjustment to an environment notably different from that of its origin it seems not unlikely that certain constitutional weaknesses may not manifest themselves for several seasons, during which the succeeding crops of offshoots gradually begin to show the effects of soil

and climate to a greater extent than that of heredity. Every amateur iris breeder eventually learns by experience that it is unwise to judge the merits of a new seedling by its virgin bloom which is frequently far better or much worse than its established bloom, and this fact may have some bearing on the stability or instability of the new clon. This is one of the many subjects I wish I knew more about or had time to investigate, but I hope that others have accumulated sufficient data to speak authoritatively and I hope that they will not refrain from contributing their observations.

Although disease and poor stamina are responsible for the disappearance of some irises the principal reason a new iris variety does not persist is lack of public acceptance. Many breeders discard scores of their iris creations that are better than some that others have the audacity to name and introduce. Although the chrysanthemum and the hemerocallis are now competing with the iris as regards the number of new varieties, it must be remembered that irises have such a head start on other popular perennials as to be virtually unbeatable in this scarcely meritorious field. To the iris of today might well be applied the immortal words of Thomas Gray who wrote:

"Full many a flower is born  
to blush unseen,  
And waste its sweetness on  
the desert air."

The "desert air" in the case of the modern iris being public disregard. I have seen many uncommon irises that have been named and registered and that rank well up in the iris 400 if they were generally disseminated and well known. Then there is the case of the stunning pink plicata that staggers under a weird name of significance only to its originator and which is scarcely known

outside his personal circle although it graces his garden in great clumps.

I have made quite a study of the conditions of iris acceptance by the public. A long treatise could be written on this subject alone, but briefly, the principal factors influencing public acceptance and popularity are:

1. A really good or striking iris to start with.
2. A good name, descriptive, euphonious and pleasing.
3. An attractive and interesting catalogue description.
4. An origination of a prominent or well-known breeder.
5. An introduction of a popular and successful dealer.
6. A good dissemination for testing prior to introduction.
7. A consistent price policy during its first five years.

These factors are listed in what seems to me to be their relative order of importance, and it would seem that the individual and collective importance of some of these factors is not realized by even some of our foremost iris breeders. It is my observation that a poor name applied to a good new iris can do more to damn and handicap its success than any other factor. Good names for irises are far from exhausted, yet every year we observe irises christened with "incompetent, irrelevant and immaterial" names that are neither descriptive, euphonious or pleasing. As far as I know, such names as Sitting Bull, Muddy Road, Kerchoo, Introvert, Przemysl, Dirty Wench, Skunk Hollow or Paralysis have not yet been applied to irises but others as unattractive have been used and many an otherwise fine iris has suffered because of its creator's whim or caprice.

It seems to me that if possible a pleasing and different name of the color itself should be the first aim of the

iris christener. Names like Chicory Blue, Ming Yellow, Copper Pink, Ruby Glow, Red Amber, Jasper Agate, Jay Blue, Vatican Purple, Pink Opal, Sable, Golden Majesty, White Spire, Apricot and many others are flawless in this respect.

Then come many splendid descriptive names which indirectly or comparatively allude to the coloring such as Prairie Sunset, Brown Thrasher, Snow Flurry, Shining Waters, Azure Skies, Red Valor, Daybreak, Black Forest, Painted Desert, Blue Shimmer, Indiana Night, Grand Canyon, and many others just as good.

Next in relative value come those names that by allusion, connotation or reference imply a description. Sometimes the reference is far-fetched, or the name harsh or non-euphonious, but some good examples are Mexico, Fiesta, Matterhorn, Lighthouse, War Eagle, Diana, Reveille, Firecracker, Fort Knox and Arctic.

Descriptive adjectives and names having no reference to color sometimes make good names, such as Chivalry, Marvelous, Nobility, Glory, Gaiety, Inspiration, Extravaganza, Valiant, Exclusive, and the like.

Many popular and pleasing names are taken from given names, mostly feminine; from geography, from mythology and canonology, from foreign languages and even from other flowers and from fairyland. Some that occur to me are Anitra, Janice, Christabel, Brunhilde, Beowulf, Rameses, Alastor, Leilani, Snoqualmie, Treasure Island, Sandia, Lancaster, Monadnock, Oregon Trail, Missouri, Alta California, Lothario, Purissima, San Gabriel, Omaha, Los Angeles, Calcutta, Dubrovnik, Evadne, Antares, Andromeda, Gayoso, Asia, Persia. All and many more perfectly acceptable.

When we get down to honoring par-

ticular people and events we frequently run into trouble, for fame is transient and a popular name today may be obsolete tomorrow. Heroic Viipuri was remembered in an iris but now that it is Viborg again the name relates only to a historical incident. Ella Winchester, Ethel Peckham, Grace Sturtevant, Frieda Mohr, Edward Lapham, Mab Chadburn, Elsa Sass, Genevieve Serouge, Frank Adams, Grace Lapham and Maizie Lowe are all very good complimentary names, but when we tack on a professional or marital title such as Dr., Mme., Mrs., Mlle., Prof., we not only violate established nomenclature practice, but we unduly emphasize the attainments or the marital state, rather than the individual whom we wish to honor or compliment.

The above general classes of names include what may be considered choice, excellent, fine, good and nice names. Other classes include the fair, indifferent, poor and freakish names. I long ago stopped buying any irises encumbered by meaningless, dissonant, derisive or absurd names. Time is just too short to try to repeatedly explain what some freak name means or why it was chosen.

Like most irisarians I passed through the collector stage of development, and although it took a lot of my time and money I do not consider them wasted or misspent, for it was distinctly educational. It not only portrayed better than any words the evolution of the modern iris, but it also demonstrated emphatically the difficulties and risks that confront the novice breeder who does not own, or have access to, a garden containing all varieties possibly similar to some new seedling which he thinks is surely good enough for introduction.

Like most iris growers, I started my iris collecting stage by ordering col-

lections. This is a satisfactory, time-honored and economical method of getting acquainted with iris varieties. Some dealers specialize on collections of many kinds, but other dealers offer none at all.

Collections comprising about one hundred different varieties of irises that were rated among the best only a decade ago, can still be bought for twenty dollars or less. Included in these collections will be some distinctly second-rate varieties on their way to oblivion, but these serve the useful purpose of providing a comparison with the better varieties obtained, and of awakening interest in iris development. Likewise, these old varieties are useful in studying first hand the improvement of the species as their newer descendants are gradually acquired. Some ancient varieties like Dominion, Kashmir White, Queen Caterina, Amas, *pseudacorus*, *albicans* and others are of historical or sentimental interest and are worth keeping for their special significance. Some other varieties that have been the founders of long iris families are worth keeping as progenitor types to visually trace development. However, if a variety is mediocre by present standards and has no sentimental historical or genetic interest it is advisable to discard it, unless it is needed to cover vacant ground until other varieties are acquired. Irises may be discarded by consigning them to the compost heap or rubbish pile; by taking them out and planting them along sunny roadsides and by giving them away to friends, neighbors and anyone else who will accept, in which case you owe it to yourself and to the fraternity to include with the gift a durable stake label, well-marked with the name of the variety. Mere discovery of the fact that irises have names has aroused the interest of many a subsequent iris lover.

In planting these initial collections, which I would start with again if I had my iris career to repeat, I have observed that there are three ways of arranging the varieties. It appears that a straight border row with the varieties in alphabetical sequence is one of the most common ways, with random planting and color and type grouping coming in the order named. I have always preferred the grouping of varieties according to their colors and types, because such grouping immensely facilitates an accurate comparison of varieties which to me, as an iris student, is more important than color symphonies and artistic arrangement. For example, I have in the center of my deep yellow bed the sterling varieties Berkeley Gold, Ola Kala and Spun Gold surrounded by a dozen or more of the golden iris peerage. Hardly more than a glance at the bed is necessary to compare relative height, branching, vigor, blooming season and flower quality. My reds, pinks and whites and bicolours are similarly arranged, but my blends are quite dispersed and I don't happen to go very heavily for the blues and purples.

However, if harmonious color arrangements are desired as part of a landscaping program, it is well to observe how varieties complement each other in an initial planting before undertaking permanent decorative plantings. Many competent articles have been written on the subject of artistic iris planting and were I contemplating such a planting I would refer to such authority rather than conduct my own experiments along this line.

After a couple of years of iris education gained by observing the performance of collection varieties and consulting later iris catalogs and the invaluable Iris Check List, it will be about time to divide many of the first-planted

clumps and to come to a few decisions regarding one's iris future. These decisions relate to how much space one can give to irises; what branch of irisology is most interesting; whether to be an omnivorous collector or to specialize in certain species, colors or types, and whether to join and participate in the American Iris Society. Another important decision to make concerns the time and money you can budget to your iris garden and whether it is to be a full-fledged hobby, or just an avocational side-line. These decisions somehow make themselves in time, so there is no use staying awake nights worrying about them.

However, if the iris bug has really bitten you, and regardless of your decisions you are going to buy more irises, then is the time to taper off on your buying of collections and begin to make your own varietal selections according to the whim, caprice or plan you have decided to follow. Right here comes a point that took me some time to learn. Your money will go farther and you will get quicker and better results by purchasing fewer varieties and more of them, buying three or more plants of a variety rather than single rhizomes. Not only do increasingly favorable prices apply to units of three, five, or a dozen of a variety, but by planting these units quite closely together to form a quick clump, a more effective use of a limited area is secured. Groups of three or five rhizomes may be planted radially toe to toe. This will prevent congestion in the center of the resulting clumps and will assure a pretty good display from the particular variety the first year after planting. Or triangular, pentagonal or other geometrical arrangements may be used to avoid the aimless, ragged appearance that random planting so often develops. In planting clumps of tall bearded iris

in a border, the triangular clump with the points facing forward, provides an excellent space for the interplanting of the unappreciated but lovely intermediate and dwarf irises, or for some low-growing, orderly mid-summer perennials like Geums, Heuchera and the like. Here again though, it is my preference to arrange clumps of varieties of the same color in the same round or oval rectangular beds to facilitate varietal comparisons.

The arrangement of irises in beds and groups is by no means confined to grouping by color classes for comparison, or to grouping for pleasing color effect. I have seen several novel groupings in various gardens of the country that are worth emulating. The fact that even many of our most modern irises are only a few generations from the species makes it possible to have fairly small beds portray the entire evolution of the key variety. If such an interesting exhibit is undertaken, be sure to check the family tree of the key variety for the present availability of its ancestors. This requires that they be named varieties still in commerce. For example, the ancestors of Wabash are still available for at least four generations, so a large clump of Wabash in the center, surrounded by semi-annular groups of Dorothy Dietz and Cantabile, which, in turn are surrounded by quadrants of Wyoming and Lent A. Williamson alternating because both Dorothy Dietz and Cantabile derive from these latter two. Surrounding the entire bed might be a border of Amas and although the other parent is unknown, it can be re-created with considerable accuracy if really desired.

One charming iris bed that I saw last spring included only those varieties bearing feminine given names, arranged tastefully in color groups. The number of varieties bearing feminine names

ranging from Aphrodite to Yolande is surprisingly large and offers many opportunities.

Then there are the iris beds which are composed of state and city varieties. California, of course, heads the list in having irises named after its cities. A bed bordered by Alta California and containing clumps of Los Angeles, San Francisco, Santa Barbara, Santa Clara, Santa Rosa, San Diego, San Luis Rey, Sacramento, to mention only a few, would provide the novelty many iris gardens need to lift them out of the commonplace. Missouri and St. Louis might be the basis of another combination, as might also Nebraska and Omaha. Colorado and Odoroc still await their Denver, Arizona its Phoenix, Helena its Montana; although Portland has its Oregon Beauty, its Oregon Giant and its Oregon Sunshine, Wyoming awaits its Cheyenne.

Mythology ranging from Alastor and Antares to Zeus and incorporating astronomy provides another basis for grouping as does geography with its Asia, Great Lakes, Pacific, etc., while lovers of art, music, drama and the occult can find an expression of their interests in iris variety names. One of the most interesting and educational iris plantings of which I know consists of clumps of all the Dykes Medal winners and runners-up arranged by years of award. It certainly illustrates iris progress.

Finally, it would be an interesting study, requiring a few years' observation of blooming dates, to compose an iris group in which each succeeding variety bloomed one day later. The possibilities are limited only by the imagination.

Buying all your irises from only one dealer is sometimes recommended, but has the disadvantage of preventing you from comparing his business practices

with those of other dealers. The principal commercial growers of this country, about thirty in number, are, on the whole, an honorable and dependable group of small businesses run by friendly men and women, fully deserving of your confidence and support. It is true that their ideas of liberality, merchandising methods, customer appeal and quality of stock differ considerably. For every shortcoming there is usually some good practice to compensate. My experience leads me to the conclusion that I should buy most of my irises from at least three dealers located in the three principal iris regions of the country, i.e., the Pacific Coast, the Midcontinent and the Atlantic States. As soon as possible I would visit the gardens of the dealers nearest to me and form a first-hand opinion of their operations. As far as practicable I buy newer varieties from their introducers, because their stock is likely to be large and better. If you appreciate the kind of service you get from a dealer, compliment him on it, and if you have cause to be dissatisfied give him the chance to make amends. For the most part our iris dealers are just "poor boys and girls" trying to get along by catering to your hobby and they depend on you as you depend on them.

Throughout the foregoing paragraphs there have been several passing references to breeding. Since this is the subject of greatest interest to about fifty per cent of all irisarians, I have reserved until the last my confessions on that subject. Sooner or later, the yen to do a little tentative iris breeding seems to afflict us, and I was no exception. After early observing the big, fat pods full of plump seeds resulting from occasional natural pollinations, it was only natural to learn how to hand-pollinate iris flowers.

Then it was only a step to observe that some varieties carried no pollen, while others seemed completely sterile. This, of course, led to a study of chromosomal variations in species and hybrids. While all this was going on, my earliest seedlings, hundreds of them, began blooming and displaying their amazing mediocrity to my doting eyes. I blush to admit that I kept probably a third of them for a second year's blooming, while I made up my mind what to do with them. Fortunately, I had the benefit of some sage advice from a senior breeder, so the next year all but two of about three hundred seedlings went into the rubbish pile.

Why did I scrap them instead of giving them to friends and neighbors? My reasoning was something like this. Fully half of the seedlings bore a fairly close resemblance to some of the varieties, but most of the rest were obviously trash. I figured that if I gave them away it would only be a question of time until they would come back to plague me in the hands of people who would want to know their names. If I recognized it for something it wasn't and miscalled it a whole tribe of a spurious variety would come into being and begin to compete with the real variety. If I declined to recognize and name it, I would be just a meany who was holding out. Hence the rubbish pile for about 99% of my seedlings, a percentage which has since increased, despite the fact that I have since learned that an iris itself unworthy of a name may carry blood lines most helpful to its progeny.

How about the seedlings I didn't discard? Well, there's where the expense began to come in. I realized, of course, that unless some otherwise very promising seedling was not different from and better than all the other similar varieties, it should be neither named

nor introduced. I was rather partial toward pink blends at that time and the woods were full of pink blends that I had to expensively acquire to compare them with mine and mine always suffered by comparison. Although it was cheaper for me to buy a lot of nice new introductions than to travel around looking at them in other's gardens, there are such concentrations of new varieties in some sections of the country that it may be cheaper to travel than to buy, but you'll probably want the variety for breeding stock anyway, so you might as well buy it in the first place.

So, as far as iris breeding for the evolution of new varieties is concerned, in spite of all its pitfalls and disillusionments, I'd do it again, with this important qualification. At least half of my efforts would be and are devoted to the development of specialized varieties for breeding stock rather than for possible introduction. By specialized varieties I mean fixed or true varieties rather than mere clons; disease resistant varieties; extra prolific varieties; mid-summer bloomers, etc. These are some of the breeding projects that every amateur breeder will find fascinating as he gets into them.

For specialized breeding of this type it is well not to discard your best selections until the performance of their progeny has been observed, for irrespective of its rating and its awards an iris is not really great until it is proven capable of transmitting its qualities, as dominant characteristics, to its descendants. This is just as true of irises as it is of dairy cows and laying hens that attain only a transient fame from their sensational yields of milk and eggs until their sons have proved capable of transmitting those qualities, and their daughters and grand-daughters have demonstrated their inheritance.

Just one other thought for amateur iris breeders. Even though a given cross between varieties yields nothing passable, the effort will not be wasted if you make it an simultaneous inheritance study and report your results. To make an inheritance study make sufficient pollinations to yield enough pods, perhaps twenty, to give at least 256 blooming seedlings after raising both the first and second year's germinations. When these seedlings bloom, classify them into 16 different types if possible; count and record the number of each type; and report your results. Your results when confirmed, will fairly well determine the transmitted characteristics of the immediate members of the particular union.

Because of the general use of the word "irises" throughout this account, it must not be assumed that pogon or bearded irises alone are meant. Far from it, because in my opinion no iris garden is complete without a plentiful representation of several beardless species. *Iris pseudacorus*, the fleur-de-lis, in its five or six varieties, deserves a place in the moistest part of any garden that is in the sun, if for no other reason than to serve as a criterion of vigorous growth. Some of the greatly improved Siberians and some of our water-loving native species and hybrids, as well as some of the better spurias can surround the clumps of *pseudacorus* to advantage, while if your soil and location are adapted to Japanese irises, some of those will add a touch to the garden that nothing else will give. Where some of the beautiful little gems such as *I. verna* and *vernamont*, *I. tectorum*, *I. cristata*, *I. reticulata* and *I. stylosa* will grow satisfactorily, they should not be overlooked. *Iris dichotoma* is interesting in a group but would never perform well for me, nor would any of the Juno group. Many of the Asi-

atic species such as *I. watti*, *I. japonica*, *I. gatesi*, *I. lorteti* and others do well in the dry summers of the Pacific southwest. I have found them very adaptable to cultivation as house plants, particularly *I. watti*, *I. japonica* and their hybrids. I have long grown Dutch, Spanish and English irises also, but that is another story, as is that of Dietes where they can be grown.

Nor am I solely an iris addict. I learned long ago that as yet the irises simply will not fill the floral season. After a lot of trial and error I have finally rather settled down to a garden where irises, peonies, daylilies, phlox, chrysanthemums are the predominant

perennials, with a scattering of hollyhocks, mallows, heleniums and lilies. Cannas, dahlias and gladioli, narcissi and tulips round out the show.

Why my interest in irises and these other flowers? Well because I think a man or woman requires the psychological balance that a hobby gives, and gardening as a hobby gives that outdoor exercise and brings that pleasant feeling of accomplishment that are so necessary for rounded and gracious living. Finally, I have found that no matter what the cares of the day or the problems of the morrow, one simply cannot keep them in mind to worry about while out in the garden.

## FOUR GARDEN SCENES

FROM THE WORK OF

MR. FLETCHER STEELE

BOSTON, MASS.

*To cross a barrier is more fun than to have no barrier at all. This wall was built up to invite the wanderer through and beyond, not to keep him out. On the far side are great trees, planted a hundred years ago. They dominate the garden and the wall, which is there only to enframe them and emphasize their importance. The gateway is there to guide the eye to the heart of shadow which lies under the old trees. It was designed to create a mood, which only a tree will satisfy. (See page 36.)*

*This wall was designed to keep people out. For within, as like as not a woman is taking a nap with no powder on her nose.*

*The wall is formidable, yet it is not supposed to indicate that the area beyond is dreary. Quite the contrary, to judge by the trees, bright sun, dark shadow and the busy tinkle of fountains. Outside, however, impersonal walls push the visitor along to the bell at the house door.*

*The place is unmistakably American. Yet the idea might have come from France where there are no visible front yards. Instead high walls border the sidewalk. They hide gardens where babies play, women shell peas and old men read their papers not a yard from the public way, shielded from confusion and curiosity. (See page 37.)*



*"This wall was built to invite . . . ."*



*"This wall was designed to keep people out."*



*"An old elm tree . . . ."*



*Paul J. Weber*

*"Here a dull barren hillside . . . ."*

*An old elm tree, sprangling wild grapes and beds of ferns keep primroses away from this small sophisticated, formal garden. Around the fountain is a pattern of box edging and beds paved with pink crushed marble, black coal and brown flagstones. Tall posts support the grape awnings. They are gilded and painted. Yet the use of native plants which are encouraged to go their own way within reasonable bounds, gives the impression that nature is content. (See page 38.)*

*Architecture loses stiffness when accommodated to topography and subordinated to planting. Even long flights of steps look "natural" when they seem to offer help to the wanderer rather than a challenge.*

*Here, a dull barren hillside was moulded to agreeable form by scraping off soil and subsoil from two to five feet deep. This revealed hidden boulders and strong rock formation into which the steps were fitted.*

*The bank was then recovered with wood soil and planted with material which thrives in the neighborhood. Thickets of American beech, Mountain Laurel, blueberries, ferns and ground cover were put around the half dozen existing trees.*

*Much care was used to associate kinds of plants and to vary the heights and distances apart to agree with observations and measurements made on wild land. Little as one might suppose, it required great pains to make a convincing natural effect with plants. (See page 39.)*

# The Illusive Ivy—IX

(Part II)

ALFRED BATES

CORRECTION. Please change date, in legend, p. 217 last issue, to read 1863.

1864. In August of that year Dr. Berthold Seemann began to publish his Revision of the Natural Order Hederaceae in Vol. II of the Journal of Botany, British and Foreign. In the October issue (p. 303) he reaches the genus *Hedera*. As these papers were later published in book form—Revision of the Natural Order Hederaceae; 1868, and the book is more easily obtained, all future citations will be made from it. Our reference starts on page 30. Seemann here announced his discovery that the formation of the hairs on the young growth and on the inflorescence of all the true ivies could be used to separate the various species. It is a microscopic distinction which has been used ever since. However he made an excusable error in that he combined all the Asiatic forms (*colchica*, Wallich's ivy and *rhombea*) under one species denomination *H. colchica*. This error was excusable because the hair formation of all three are scale-like and very similar in appearance and, presumedly, he had no live material of the Wallich ivy to work with (if he had he would surely have later recognized Hibberd's "cinerea" and only too gladly taken Hibberd to task). But what is surprising is that although he was in communication with Koch in regard to *H. colchica* no mention is made of the name "nepalensis" although under *colchica* he cites references to both Don and Wallich and gives De Candolle's "chrysocarpa" as a questionable synonym. (Rev. Nat. Ord. Hed., p. 33.) If this omission had been an oversight in the Journal it could have been corrected in the book, had Koch desired, for Seemann clearly states that he had been in communication with Koch re-

garding *H. colchica*, "It is owing to an authentic specimen kindly transmitted by him that I am able to identify this new species with the Asiatic Ivy." (ib. p. 32) It seems evident that Koch did not call Seemann's attention to this name of "nepalensis" and we can only surmise that either he (Koch) had forgotten it or had come to the conclusion that he had rashly given it with too little knowledge of the plant (remember he cited book references only) and was willing to drop the name. As stated above, Koch never referred to his name "nepalensis" after publishing it in 1853 even though he treated the entire genus in *Wochenschrift für Gaertnerei und Pflanzung* (1859) and again in *Dendrologie* (1869).

We may then be reasonably sure that live material was *not* known to either Koch or Seemann; and probably not even herbarium specimens, for neither refer to them, giving only citations from books which were not illustrated. (I have not been able to ascertain the dates when Wallich's specimens were deposited in the Kew and the British Museum Herbaria so cannot prove this point.) Had either writer seen illustrations, dried specimens or living plants of the Himalayan Ivy they would have at once noticed the differences between the thin textured, deeply lobed, long leaf of this plant and the thick textured, unlobed, wide leaf of the Colchian Ivy.

Against this claim two objections might be raised; first, we have a name which could be our plant, and secondly, how else could Seemann have known of the scale-like formation of the hairs? As to the first objection; some form

of the plant was undoubtedly grown in England at this time for Hibberd's list of 1863 contains the name "himalaica" (even though the description is both faulty and vague) and he does not refer to it as a novelty although as stated above I can find no earlier listing of that name. We may therefore surmise that it existed in *some* nurseries; that neither name nor plant was well known the following extract will prove. In Vol. 33 of the *Journal of Horticulture and Cottage Gardener*, issue of Jan. 31, 1865, p. 86, G. Abbey in an article on Ivies gives a short list of named forms in which he makes this observation, "yellow berried sub-variety (*H. helix baccifera lutea*, which is synonymous with *chrysocarpa*, there being a *H. helix chrysocarpa* from Northern India, with narrow-lobed leaves, having silvery veins)." Furthermore we may conclude that as such plants as bore the name had not yet fruited Seemann may have easily overlooked it.

In answer to the second objection we may point out the very clear statement of Wallich's that the peduncles are "all covered with minute stellate silvery scales. Flowers . . . covered on the outside with scales." Seemann seeing the scale formation of both *H. H. colchica* and *rhombea* (at this time it was positively grown in England, at least in its variegated form and under its true name) was similar, may have considered Wallich's statement authoritative enough to accept. We must also remember that the leaf of *rhombea* approaches that of *colchica* in that it is not definitely lobed, is not particularly thin in texture and is proportionately wide in relation to its length. Therefore Seemann, without live material of all three plants before him, can not be severely blamed for considering the three Asiatic ivies as one species.

1866. In 1865 The Gardener's

Monthly, edited by Thomas Meehan of Philadelphia, reprinted in full Seemann's descriptions of the European, African and Asiatic Ivies from the *Journal of Botany*. This evidently stimulated some interest here in America for in the following year (1866) a list of 43 named forms was published. The article is unsigned and so was probably written by Meehan himself. It contains a very brief description of each but in the text which follows the list some additional information is added. Our plant is listed under the name "*chrysocarpa*" and two references to it are added in the text. "19. *Helix chrysocarpa* (North Indian variety) golden berried English Ivy," and in text, "No. 19 has elegant narrow-lobed leaves with silvery-white veins. . . . For miniature growth or comparatively low walls, and close leaf-growth, Nos. 21, 33, 19, 41, 34, 26, 23, 31, may be chosen." (*Gar. Monthly*, 1866; p. 28.) It would be interesting to know whether this description was made from first hand observation of plants imported from England or merely compiled from an English list. For it should be noted that the plant in question has "close leaf-growth" as against Hibberd's "slender, long-jointed" habit of "*himalaica*" in his list of 1864. However, because of the name, it may be Hibberd's "*chrysocarpa*" and if so is not our plant. Meehan may have been using Hibberd for authority for in 1874 an article by Hibberd appeared in *The Gardener's Monthly*.

Other than the occurrence of our plant in the 1874 article which will be cited later, no further mention of any of the names can be found in later issues of *The Gardener's Monthly* or any other American publication which I have seen. And it was tantalizing to find, in the library of the New York Botanical Garden, a copy of a catalog issued by George Such of South Am-

boy, N. J. dated 1881 in which he states he was discontinuing listing the large number of named ivies which had been cataloged for many years although he still carried the plants. Further search has failed to bring to light any earlier catalog and should any reader know of the existence of one dated during the late 1870s will he kindly let me know of it.

**1867.** In *The Gardeners' Chronicle* (issue of Nov. 30, 1867; p. 1215) William Paul, a prominent English horticulturist and nurseryman, gave a list of 40 ivies which was his selection of the best forms in cultivation and to each name he gave a short but quite intelligent description. This list was translated into German and published by the botanist Koch in *Hamberger Garten- und Blumenzeitung*, 1868; p. 17. Koch made some suggestions as to a rearrangement of the order in which Paul had listed the forms. Paul compiled with Koch's suggestions and republished the rearranged list in *The Florist and Pomologist*, 1870; p. 269; which was immediately published by Koch in *Gartnerei und Pflanzenkunde*, 1870; p. 403. The names and descriptions are the same in all four lists and "himalaica" does not occur but "chrysocarpa" does.

As we are trying to make a critical research as to names, what they stand for, and how and when they came into use we must therefore question and analyze Paul's listing. Undoubtedly the ivies named were those which Paul carried in his own nursery; but it is so large that we cannot but wonder why it did not include "himalaica." Was that plant unknown to him? Did he consider it of so little importance or so small difference that he did not think it worth carrying? Was it one rejected from his selected list? Was it professional jealousy that prevented him from listing and carrying an ivy

some other nursery had got before he had? Or was it his "chrysocarpa"? (Note Koch's remark later on.) These are questions we cannot answer knowingly. But this we do know; he was willing to work with botanists who knew more of ivy classification than he did for he both cited Seemann's division of the genus and followed Koch's suggested rearrangement of his list. That he had been in communication with Koch is proven by the fact that both rearrangements—his and Koch's translation—appeared simultaneously, in the December issues of the English and the German publications. The fact that neither he nor Koch mention the name "himalaica" inclines us to conclude that it was not in general use; and this seems reasonable from the remarks made by Koch in his notes on the list of 1870. At the end of his article he (Koch) says, "In spite of the great number of forms presented here we regret the absence of several, which in Germany, at least, are widely distributed, two which grow in Ireland—*H. hibernica* and *Hodgensii* . . . (G. und P. 1870; p. 404) and to "chrysocarpa" which is described by Paul as, "Leaves dark green, small; growth rapid. Berries yellow." and translated by Koch as, "Leaves small, very dark; berries yellow." Koch adds a footnote, "The true *H. chrysocarpa* Requ. has roundish buds with golden yellow scales and differs in otherways from the form named here." (G. und P. 1870; p. 403.) We can only conclude that there were two "chrysocarps" in nursery lists and that the orange fruit of one had not yet been seen. But the surprising part of it is that Koch when he had so good an opportunity to refer to his name "nepalensis" did not do so.

**1870.** The next mention of our plant occurs in *The Garden Oracle* of 1870, an annual publication edited by Hibberd and much like present day Gar-

deners' Almanacs. In it Hibberd made his preliminary announcement to the general public of his creation of a new nomenclature. The private announcement had been made earlier for the article was "abridged from a Paper communicated to the Linnæan Society." (G. O., 1870; p. 123) and contained his new names with very short descriptions. "*Cinerea*, known in gardens as 'Himalaica'; it has the most decidedly grey-tinted leaves of any in this section." (G. O., 1870; p. 124.) However we have full descriptions, for the paper in its entirety was published later in that year in another of his magazines, *The Gardener's Weekly Magazine*. But before either of these were given to the public there are several items which are of interest to us even though they do not have direct bearing upon our plant.

In *The Gardeners' Chronicle* of Dec. 4, 1869 we learn that at the meeting of the Linnæan Society held Nov. 18, 1869 a paper was read, "*On the Classification and Nomenclature of the Species and Varieties of Hedera*, by Mr. Shirley Hibberd; communicated by Mr. W. Robinson." (Gar. Chron., 1869; p. 1259.) This called forth a letter from Seemann, for Hibberd had tried to take credit for the discovery of the ray-formations. This letter reads in part, "At p. 1259 you give a brief abstract of a paper on garden Ivies, submitted by Mr. S. Hibberd to the Linnæan Society, and of which I have seen the full report. Mr. Hibberd does me the honour of adopting, though without acknowledgment, my interpretation of the genus *Hedera*, and the species composing it, as published in my 'Revision of Hederaceæ' . . . A careful study of our garden Ivies might thus prove of direct scientific value, and I was in hope that Mr. Hibberd's paper would have been the result of such a study. But I cannot help thinking that

he has been ill-advised to submit his researches in their present raw state to the consideration of the Linnæan Society. He is altogether wrong, as every botanist will tell him, to change well established specific names—absolutely inassailable as far as their right of priority is concerned,—because they do not harmonize with the system of nomenclature set up for his varieties." (Gar. Chron. 1869; p. 1281.) In the next issue of this magazine (ib.; p. 1308) Hibbard had the effrontery to defend himself by claiming that he had not seen Seemann's writings on the subject. As a research worker on ivies he should have made it a point to familiarize himself with his subject. Seemann was an outstanding botanist and his work on the genus had been published in 1864 and reissued in book form in 1868 and *must* have been known to Hibberd if only through his capacity as editor of several horticultural magazines aside from his interest in the subject. And furthermore his own publication, *The Gardener's Weekly Magazine* (Vol. VI, Oct. 22, 1864; p. 342) had contained the extract from Seemann's *Journal of Botany* regarding the hair formations of the Ivies of Europe, Africa and Asia.

Here at the beginning of our consideration of species and varieties, the fact that Hibberd did not do any research work and that his conclusions, and descriptions, were wilfully distorted to fit into his system of innovations cannot be too strongly stressed for it will come up constantly in regard to every species and variety save *H. Helix* and a very few of its forms. A research worker in any subject must acquaint himself with what has been done before him and with what is being done in the period when he is working. There will always be many odds and ends—and often important ones—tucked away in obscure corners of even the literature

which he examines and has access to that will inadvertently be overlooked, without deliberately ignoring information which is where everyone may read. After over a dozen years with Hibberd's book and the magazine articles of that period before me, I must confess that I am decidedly prejudiced against his work and the manner in which he did it and especially with his arrogant brushing aside of bona-fide names and cannot understand why some botanists accept his confusions. His work was thoroughly unscientific, his descriptions were uneven and hastily made in that he often overlooked the most salient features and his belief in his own infallibility amounted to cocksureness to a ridiculous degree—see later his letter to André regarding our plant.

Before his paper was published in full, the first issue of *The Gardener's Weekly Magazine* for 1870 contained a notice on p. 15 to the effect that Hibberd had sold his collection of Ivies to Mr. Charles Turner, a nurseryman of Slough. It would be of great interest to us if we could see a catalog of that nursery dating from that period. Whatever financial profit this transaction brought Turner it was evidently not because of the new names for when the R.H.S. made a collection of ivies for their garden at Chiswick in the late '80's Mr. Turner contributed many of the plants under their old names including *himalaica*; but of this more will be said later.

The publication of Hibberd's paper in *The Gardener's Weekly Magazine* began in the issue of March 19, 1870 and ran through seven installments including the same leaf drawings used in his book. At the end of the first installment he refers to his series of '63 and asks his readers to ignore that classification and the names to be found in books "as I shall offer presently some-

thing better, having I trust, settled all the technical details of the subject in a way that will last for some years to come—for our time at least, whatever the next generation may require." (*Gar. Week.*, Vol. 13, 1870; p. 128.) Brave words from a man who had just been rebuked by a botanist of Seemann's standing! Did he think that botanical nomenclature should change with the fashion in dress? Or that horticulturists had the right to wipe out botanical names whenever it suited their whims?

The list of forms begins in the third installment where we find our plant; "13. *CINEREA*, the *Grey-leaved ivy*. (syn. *Himalaica*).—Very distinct and interesting; scarcely robust, but growing freely. The leaves are smallish and peculiar in form and colour; in some instances they are three-lobed and nearly triangular, in others the central lobe is prolonged, and has a few sharp



**CINEREA (No. 13).**

*From The Gardener's Weekly 1870, p. 152; and as in The Ivy, 1872, p. 76.*

subsidiary lobes and notches on the side; the colour is greyish green, the lines of the principal veins being a lighter grey than the blade, and inclining to a milky hue. This is the most tender variety in the section, a severe winter damaging its appearance considerably." (Gar. Week., Apr. 2, 1870; p. 152 & The Ivy, 1872; p. 71.) A drawing of a leaf is shown and is here reproduced. This is certainly our plant, or some form of it, even though no mention is made of either the very characteristic pinkish purple flush on the new growth or the violet cast of the under surface of the leaves in winter; nor of the lax petiole. That no mention is made of its berried form proves that it had not developed its mature stage in England at this time. That Hibberd did not list "chrysocarpa" as a synonym proves, at least to me, that he had not made any search into nomenclature and that he had *not* collected plants from all available sources for "chrysocarpa" was known in England as the "Northern Indian" ivy, at least in some quarters, as we have seen from the notation by G. Abbey cited above.

**1874.** In Thomas Meehan's The Gardener's Monthly, issue of Jan., 1874, Hibberd contributed an article on ivies in which he described our plant from a new angle. "Cinerea ('Himalaica' of the books)—The young leaves are deeply, sharply and peculiarly lobed, but as they acquire maturity, the lobes disappear, and in winter there is not a sign of a lobe to be seen." (G.M., 1874; p. 5.) It should be noted that here for the first time he refers to the deep lobing and claims that the leaves lose their lobing in winter (a figment of his imagination) and that he ignores the grey band along the veins and omits the color and the size of the leaves.

**1882.** Although there are many

articles and small items on ivies, almost always under the old nomenclature, during the 1870's our plant is not mentioned again until in Vol. 22 of The Garden (Nov. 11, 1882; p. 430) a brief note calls attention to an article by E. André in Revue Horticole of Aug. 16, 1882, entitled "An Ivy with Red Fruits." Upon referring to the French journal we find that André had compared his plant with Hibberd's "cinerea" and, having decided it was different, had suggested another name, *H. H. erythrocarpa* (red-fruited). (R. H., 1882; p. 356.) But he had depended upon another's description of the color; he having seen the plant only while the berries were still green. He promises a fuller description together with a colored illustration in Revue Horticole when he would obtain ripe fruiting sprays from the Riviera where his attention had first been called to the plant.

**1884.** Over a year later The Garden (Vol. 25, March 1, 1884; p. 178) again calls its readers' attention to André's ivy, this time under the name *H. H. var. aurantiaca*, as recently described and illustrated in color in Revue Horticole, "handsome orange-red fruits and long slightly lobed leaves with the nerves on the upper surface of the foliage rendered conspicuous by rather broad shaded whitish zones which run parallel to them." And in the next issue (ib. p. 199) informs its readers that plants of this ivy will shortly be sent out by Messrs. Besson of Nice. Many plants must have been received either directly or indirectly from this source for beginning in 1888 and for the next six or more years we find many inquiries and complaints in the English gardening magazines as to "*H. H. var. aurantiaca*" not producing its orange colored berries but no record of its having fruited.

The article in Revue Horticole is not



Fig. 20. — Rameau de la forme rampante du Lierre à fruits orangés (*Hedera Helix aurantiaca*), au 1/3 de grandeur naturelle.

From *Revue Horticole*  
1884; p. 84

only accompanied by the colored plate which André had promised but also with a line drawing of the juvenile foliage and a twig showing a state of transition. We have here the first illustration of our plant, other than merely a leaf, and are able to fully identify it. Both of these illustrations are reproduced here though the full beauty of the colored plate cannot be shown in the reproduction. In his article André gives the history of his plant. It had for some years been growing in the courtyard of a villa in Cannes from which it had been prepagated by the nursery firm of MM. Besson of Nice. From whence the original plant at Cannes had come no one seemed to know. The nurserymen were responsible for André's first statement as to the color of the fruits and this he now corrects, "not as deep red as the first enthusiastic observer had said but of a beautiful orange." (R.H., 1884; p. 84.) He then tells us that he had written to Hibberd before publishing his full description and gives the

letter which Hibberd wrote in reply.

"Your letter interested me immensely. An Ivy with red fruits is possible, for the genus has certainly given us forms with black berries and perhaps white. Regarding the facts mentioned ivy plants are variable in regard to the foliage and you could have the same variety as that which I have named *chrysocarpa*. My real opinion is that your plant is the true 'Ivy of the Poets' but that it differs from mine by distinct characteristics. You will see on page 76 of my book that the ivy of the Himalayas resembles a climbing form like yours. If it is the same as *cinerea*, you will find as the plant advances in age the leaves little by little lose their lobes and the very distinctly characteristic grey lines which follow the principal nerves.

"As we cannot at this time do else but wait (the fruit and colouring) I am inclined to believe that your plant will not be a Greek form but the Indian of *Hedera Helix*. If the berries are as one has said of the colour of those of the Sorbus of the Fowlers (Mountain Ash) [*Sorbus Aucuparia*, A.B.] you will be correct to describe the plant as the 'Ivy with Red Berries.'

"I have asked Mr. Turner to send to you by post a branch already berried of our ivy with yellow fruits.

Most cordially yours,  
Shirley Hibberd."

Even allowing for the double translation—from English into French, then back into English—one would hardly call this a very informative letter from the man who claimed to have settled the ivy question in "all technical details . . . in a way that will last for some years to come—for our time at least." In analyzing this letter one should note that he says there are "perhaps" white berried forms; yet he lists on page 92 of his book "*leucocarpa*, White-berried ivy" although he acknowledges he had

not seen it in fruit. Then he tells André that he "could have the same variety as that which I have named *chysocarpa*. My real opinion is that your plant is the true 'Ivy of the Poets' but that it differs from mine by distinct characteristics." But he then refers André to his book, "You will see on page 76 of my book that the ivy of the Himalayas resembles a climbing from like yours" and ends with the statement "I am inclined to believe that your plant will not be a *Greek* form but the *Indian* of *Hedera Helix*." If he considered it "*chysocarpa*," the Ivy of the Poets, how then could he also believe it to be "*cinerea*?" It should also be noted that both here and in the index of his book he claims to have given the name *chysocarpa* to the yellow-berried ivy of the poets; this is not true for Walsh in 1826 had given it to the yellow-fruited form and it was so known in England at the time when he was writing. Lastly, on page 92 of his book, under "*Chrysocarpa*, Yellow-berried ivy" which he lists as an arborescent form—not a scandent—he describes the fruit as being "a dull deep orange color." Was this color blindness or just slovenly writing? Yet it is a sample of his careless descriptions and faulty research.

The promised branch from Turner reached André who at once saw that it was not like his ivy. "It is necessary then to conclude either that it is a new form or it is an adult form of *H.H. cinerea* the name of which in this case should be changed to *H. H. aurantiaca*. . . ." (R.H., 1884; p. 85.) It is not clear to me whether André meant to change the name *cinerea* or to retain that name for the scandent form and use his name *aurantiaca* for the mature form. He then gives the fullest description based on European material that so far had been made of our plant. "The branches climb like those of the

type before having reached the adult stage, carrying variously formed leaves with long petioles, of which the most are characterized by a triangular and a trilobed form, varying to shallowly divided lobes, the terminal lobe generally a great deal longer than the others. The upper surface, green and shaded with whitish splashes or zones along the principal veins. We must add that in the south these discolored areas often take on a deep violet red color at the end of the season and hold it all winter. The under side of the leaves also often becomes violet.

"The mature branches, or those bearing fruit, are erect and arranged as the ivy of our woods; their leaves gradually (that is, as they approach the end of the branch, A.B.) lose their lobes and indentations and become sharply lanceolate and rounded at the base, till at last (that is, those just below the flowers, A.B.) they are very sharp pointed at each end. The corymbs have flowers with long pedicels and resemble those of the type; they are followed by almost spherical berries of a beautiful orange color, of four bulging divisions crowned by the imprint of a round scar filled in by the persistent stigma." (R.H., 1884; p. 85.) He then observes that "One very curious peculiarity is that the ivy with orange fruit reproduces itself from seed, at least in as much as concerns the form and color of the leaves." Which of course is quite to be expected unless the flowers have been cross fertilized. But what is astonishing is that seed sown in 1883 had by 1884 produced plants which showed their true leaf shape; for according to Tobler the true leaf characteristics of any ivy do not develop until later. My own experience with seedlings of this species will be given later.

**1886.** The next mention of our plant occurs in Nicholson's Diction-



*Hedera Helix aurantiaca*

From *Revue Horticole*, 1884.

Plate facing page 84.

Reduced about one third.

ary of Gardening, under the name "aurantia" which is evidently a misprint for he cites the illustration of "aurantiaca" in *Revue Horticole*; but the omission of the last syllable is not corrected in the *errata* to that volume so he may have intended to change the name. It is reasonable to suppose that he was familiar with the plant for he marks it with an asterisk indicating it to be especially good or distinct. His description is meager, "**H. H. aurantia** (orange). \* *l.* like those of *H. H. chrysocarpa*, but fruits of a beautiful reddish-orange colour. (R.H. 1884, 84.)." (G.D., Vol. II, 1886; p. 120.) Nicholson restricts De Candolle's name of "chrysocarpa" to the Himalayan ivy and ignores its application to the Greek form for his "chrysocarpa" is clearly our plant even though called "golden-fruited." "**H. H. chrysocarpa** (golden-fruited). \* *l.* smallish, sometimes nearly triangular and three lobed; central lobe frequently prolonged, with a few sharp lobes or notches; colour greyish-green; principal veins lined with markings of a lighter shade. A quick-growing climber." (ib. p. 121) He does not list *cinerea* (Hib.) or *himalaica* (H) nor does he give *poetarum* or *poetica* and while listing *lucida* he makes no reference to it being "the ivy of the poets" as Hibberd had maintained nor give any synonyms for it.

**1887.** In Vol. 31 of *The Garden*, E.C., writing of the collection of ivies in the Royal Horticultural Society's garden at Chiswick mentions our plant; "*Himalaica* makes a free, picturesque growth and clings close to the wall; the leaves are small, ovate, green, with dull white nerves; a useful kind." (Gar. Vol. 31, July 2, 1887; p. 613.) In the same magazine, Vol. 34, Dec. 22, 1888; p. 587 we learn that *aurantiaca* which had been imported from France by J. Veitch & Sons in 1884 had not as yet fruited. From then until about

1894 occur the frequent complaints referred to above.

**1890.** Hibberd's last remarks on ivies were made in Vol. 12 of the Royal Horticultural Society's *Journal* shortly before his death. The ivy collection in the Society's garden at Chiswick had been attracting much attention and Hibberd says he had been requested to straighten out the nomenclature for many of the plants were labeled with their old names. We are concerned here with his description of our plant only; "*Cinerea* is an Asiatic form of *helix* of rather tender constitution. It is distinct and pleasing and peculiarly interesting in growth on account of the sharp side lobes subsequent to the growth of the leaf to normal size. The colour is dull green with a shade of grey, in some circumstances giving the plant the appearance of having been dusted with ashes. In a cold climate it suffers from frost in winter, but is hardy enough for all purposes. Contributed by Mr. Fraser as *Himalaica* and by Mr. Turner as *Himalaica*. Syn. *Chrysocarpa*, *Baccifera lutea*, *North Indian Golden*, *Cuneiformis*." (R.H.S. Jour., Vol. 12, 1890; p. 390.) Why was not "aurantiaca" listed as a synonym? From whence did "cuneiformis" come? I can find no other mention of it and conclude it was a catalog name—unless Hibberd was striving to be facetious. And why is the issue still confused by listing names of arborescent forms among synonyms of scandent forms? It should also be noted that Turner, the man who bought Hibberd's collection in 1870, was still, after twenty years, using the older name "himalaica" in disregard to Hibberd's innovation.

In this same year E. A. Carrière published a list of ivies in *Revue Horticole* (1890; p. 162). In passing it may be of interest to note that Carrière and André were joint editors of *Revue*

Horticole for many years and that both names are perpetuated in several of our finest garden plants, notably *Cra-tægus* x *Carrièrei* and *Clematis* 'Mme. Edouard André. In this article Carrière merely lists and describes the plants under the names they bore in the collection of Honoré Defresne, a horticulturist of Vitry and does not make any effort to correct the nomenclature or to verify its authenticity. This fact should be remembered by students when reading the reference to this list, for Schneider, Tobler and some other writers refer to it in a degree far exceeding its value. From the meager descriptions the names which clearly indicate our plant, or may be meant for it, are "chrysocarpa," "aurantiaca," "aurantiaca fructu rubro" (these listed among scandent forms) and "himalaica" (among arborescent forms). There is no mention of "cinerea." As "poetica" is given we may conclude that he did not mean that form by his "chrysocarpa."

**1894.** The Kew Handlist of 1894 gives "aurantiaca" but not "aurantia"; as Nicholson was a Kew man this would indicate the later spelling to have been a misprint. The list also gives "cinerea" but not "himaliaca." As Kew lists only such names as they consider authentic the compilers evidently looked upon "aurantiaca" and "cinerea" as two distinct forms.

**1902-11.** In the early years of the twentieth century three small volumes on climbing plants were issued in England: The Book of Climbing Plants (1902) by S. Arnott, in the Handbooks of Practical Gardening series; A Concise Handbook of Climbers, Twiners & Wall Shrubs (1906) by H. Purefoy Fitzgerald; Climbing Plants (circa, 1911) by William Watson, in the Present-Day Gardening series or, as it was called in America, Garden Flowers in Color series. In all

three the space devoted to *Hedera* is quite small; and it is very disappointing that only one lists our plant—and under Nicholson's misspelled name. "H. H. aurantia has greyish-green leaves prettily veined." (Book of Climbing Plants, S. Arnott, 1902; p. 40.)

**1909.** C. K. Schneider briefly treated the genus in *Illustriertes Handbuch der Laubholzkunde* (1909; p. 421-23) and though giving but a line or two to our plant in the text he shows four leaf drawings of it. On plate 287 the figures *m* & *n* show juvenile leaves and *o* & *p* mature leaves of it. Schneider, as did all prior writers save Koch with his enigmatic "nepalensis" in 1853, considered our plant a form of *Helix*.

**1912.** It was left to Friedrich Tobler in *Die Gattung Hedera* to definitely establish this plant as a species under the name *H. himaliaca*. (ib. p. 67.) One can but regret that this name can not stand for it more definitely places the plant geographically than the more localized *nepalensis*. But being a stickler for botanical rules and priorities I can but bow to their usage; though it does seem unscientific to be able to establish a species upon merely the description of others without having seen living plants, herbarium specimens or even illustrations. As Tobler's treatment and description will be included under the section dealing with the plant as known in United States they are omitted here.

**1914-15.** W. J. Bean's *Trees and Shrubs Hardy in the British Isles* was issued in an American edition (Dutton & Co.) in 1915, an English edition having been published a year earlier, and as the paging is the same in both I cite from the American edition. Bean completely ignores Tobler's work and raises Hibberd's name of "cinerea" to specific rank without any explanation for so doing. "H. CINEREA, Hibberd.

HIMALAYAN IVY. (*H. Helix* var. *himalaica*)" (ib. Vol. I, p. 608) omitting any other synonyms. In his third volume of 1933 in which he brought his work up to date he adds nothing to, nor corrects anything in, what he had earlier written on *Hedera*. The Kew Handlist of 1925 follows Bean; as do such English catalogs as I have seen.

1923. Alfred Rehder in the Journal of the Arnold Arboretum Vol. IV, 1923; p. 250 corrected Tobler's oversight of Koch's name of *H. nepalensis*. "When Tobler proposed his *H. himalaica* he overlooked the fact that in 1853 K. Koch (Hort. Dendr. 284) had already given the name to this species

basing it on the *H. Helix* of Don's Prodrumus and Roxburgh's Flora Indica." Tobler can hardly be blamed for this oversight for Koch's name and citations take the space of a mere two lines and, as stated above, Koch never referred to it again although he later wrote more fully upon the genus.

1927. Tobler was quick to accept Rehder's correction for when he published in Mitteilungen der Deutschen Dendrologischen Gesellschaft of 1927 an article on The Garden forms of *Hedera* he made the change in name (ib. p. 9). And unless an even earlier name can be unearthed our plant will continue to be *H. nepalensis*.

## Rock Garden Notes

ROBERT C. MONCURE, Editor

### A "Pancake" Garden

Sixteen years ago I started a new garden 100 by 50 feet. In the center I put a bed 80 by 40 for annuals and the like, enclosed by a low clipped box edging. Outside this was a strip of soil one and one half feet wide before the paving started. I had a hunch! Why not edge this with rocks, putting flat rocks a foot apart inside the rock edge and start a rock border. You would think this might be easy. Not so, as it has taken me fifteen years to get it just to my liking!

I began with three each of ten different rock plants and as these grew and spread they formed mats the size of dinner plates. My friends called them "pancakes," and to this day we call it the pancake border. You see really the very flatness of this garden is all wrong for rock plants, for when I water the large center bed the "pancakes" get far too much water. I put in the Gem violas and pinks and other plants of like size but they did not look

right. One day looking at them, I thought—it is a "pancake" border, so I'll keep it flat and out came all the tall plants. I tried dozens and dozens of flat rocks and to make a long story short (ten years) I have settled down to five tried and true flat rock plants. Many nice low things just curled up and died, but these five have liked me, and when a plant likes me, I adore it!

First comes *Potentilla verna nana* a great find with dark green leaves and in Spring, masses of golden flowers.

Second come the thymes, *album*, *coccineus* and *lanuginosus* all forms of *Thymus Serpyllum* and now we have charming seedling thymes of our own.

Third, *Bellium minutum* the lovely little Greek daisy from Purdy. It has a way of blooming itself to death, but it is so lovely I do it over when it passes.

Fourth, *Erodium chamaedryoides roseum* a little pink beauty always in bloom, of which sometimes whole plants die, but I have young plants

waiting to replace the losses as the border needs the pink of the lovely blossoms.

Fifth, *Veronica rupestris* not very exciting, but so sturdy, I always fill all corners with it. It will grow anywhere, water or no water.

I do the border over completely every three or four years, as I love it so much.

The effect, as a whole, of this "pancake" is like that of a flowered carpet, flat, blooming in various colors, covering the entire ground, the flat rocks, and spilling over a bit. It is not only very beautiful in itself, but sets off the center garden and the higher annuals.

Many visitors to the garden pass it by, they do not even see it, but a few flower lovers who do see it, get down on their knees to examine the little beauties!

This may not be a very good rock garden, but it may give others an idea which they can develop to suit themselves, and if they get half the fun that I have had with my "pancake," it will be worth while.

MRS. H. C. SCRUTTON,  
Petaluma, California.

#### "Upon a Rock," *Empetrum*

The Greeks apparently had a word for everything. In any case, we have applied their ancient name, *Empetrum*, to an interesting plant. "Upon a rock" aptly describes the usual home of the Black Crowberry, *E. nigrum*. A spreading, Heath-like shrub some four to ten inches high, it makes attractive bushlets in the wild or the garden. This species grows in many sections of the Northern Hemisphere.

The Heathberry, as it is sometimes called, forms a prominent part of Arctic vegetation. I first saw *Empetrum* on the high mountains of New England. As one travels north, it becomes

more abundant and descends to sea level on the Maine coast. Large carpets between the rock outcrops or tufted specimens in the rock crevices are not uncommon. The plants are a pleasant sight at all seasons.

Small, evergreen, needle-like leaves clothe the slender stems. Each Spring inconspicuous flowers of a peculiar type appear in the axils of some of these leaves. Some have only stamens, others pistils, and a few both; this condition is technically called "polygamous." The black, berry-like drupes which mature in July or August are showy and tempting. There are also varieties with reddish or purplish fruit. Although all are edible, they are not very palatable. Their main value to us is ornamental. Plants, covered as they frequently are with hundreds of "berries," are striking.

As you have probably surmised, the Crowberry is valuable in the garden. It is a tractable rock or wildflower garden subject. In a sandy, peaty soil with an acid reaction and a sunny or lightly shaded position with good drainage and average moisture, *Empetrum* makes close mats of attractive green.

WARREN C. WILSON.

#### The Glandular Birch

If asked, "What is a Birch?" most persons would reply, "A tree." Yet, contrary to the usual opinion, not all Birches are trees! In the far North a dwarf, deciduous shrub which fulfills the botanical description of Birches covers large areas of the Arctic barrens. It is a true Birch.

The botanists have christened this plant *Betula glandulosa*; we probably prefer to call it by one of its vernacular names: Dwarf, Scrub, or Glandular Birch. All three describe some of its outstanding characteristics. The short, twiggy stems have prominent, resin-

ous, wart-like glands. This Birch is usually about a foot high but in protected locations may reach six feet. Its leaves, somewhat leathery and almost round, are very attractive with their coarsely but symmetrically toothed margins. The beauty of this foliage is enhanced by its moderate gloss and pale green color. The flowers, small unisexual catkins and cones, are interesting but not showy.

The Glandular Birch grows from Alaska to Greenland and south to the high mountain tops and cold bogs of New England, thence locally westward to Oregon. Although it is rare in cultivation, and despite its rather unusual habitats, it is not very difficult to grow. A sunny or lightly shaded spot with a mixture of loam, sand, and acid humus and plenty of moisture will fulfill its cultural requirements.

# Rhododendron Notes

CLEMENT G. BOWERS, *Editor*

## YELLOW RHODODENDRONS

For England and for our Pacific Northwest, and possibly for other mild American climates or sheltered spots where summer heat and dryness can be modified, there is a fairly long list of rhododendron species classified as having yellow flowers, among which several worthwhile sorts might be found which would fit into the prevailing conditions. These species range from dwarf ground-covers, (*R. aperiantum* and six others), shrubs up to six feet (including more than 30 species under three feet and 25 more up to six feet), and shrubs up to 12 feet (of which *R. campylocarpum* is purportedly the best example, although there are six others), to very large shrubs or small trees of great tenderness (such as *R. Falconeri*). These are all classed as evergreen or "true" rhododendrons.

Since most of these are tender on the Atlantic seaboard, it has long been the dreams of a plant breeder to cross them with hardy sorts and carry the yellow pigmentation into the hardy hybrids. This may some day be done. At present, however, it seems that the hardier of the yellow sorts are of weak or indifferent color and become even weaker when crossed with non-yellow hardy sorts. Perhaps the best chance of obtaining hardy yellow evergreen rhododendrons exists in the dwarf alpine or rock-garden types. But this does not offer much encouragement to those who wish to obtain yellow color in a type which approximates *R. catawbiense* or *R. maximum* or *R. carolinianum* in character and usefulness. True, there are certain seedlings of the *R. Fortunei* series that are tinged with yellow, and these offer great promise. But nothing

has yet appeared which might warrant the belief that a good yellow color is obtainable. Perhaps the hardiest of the yellow evergreen rhododendrons in the Eastern United States is the Japanese *R. Keiskei* of the Triflorum series which does moderately well around New York City, but which has failed to impress this observer with any special worthwhileness in its pale, dull, smallish, sulphur-green blossoms.

While I will readily concede the value of yellow or yellowish flowers in the larger species, these occur mainly on rhododendrons that are too tender for the United States exclusive of the West Coast or perhaps certain spots in the South. Any that I have observed approaching hardiness for the Northeastern United States, are, like *R. Keiskei*, miserable examples when compared to our hardy yellow azaleas. I have concluded that, aside from those having a yellow tinge or conspicuous yellow spotting on the upper lobe, the search for a good yellow hardy evergreen rhododendron for the Northeast is not worth the effort. Evergreenness alone is not so much to be desired as to make me think the insipid yellowish evergreen rhododendrons are to be preferred to the gorgeous yellow colors that are found in the deciduous azaleas.

So in my search for hardy yellow rhododendrons I am now pleased to turn my attention to the deciduous azaleas. These, of course, are rhododendrons, too, and, aside from the lack of evergreen leaves, some of them are much more like typical rhododendrons than are the forms like *R. Keiskei* and the alpine dwarfs. Many yellow plants of *R. calendulaceum* exhibit round

trusses of 20 to 30 flowers, as typically rhododendron-like in character as the clusters on *R. maximum* or *R. catawbiense*. This same feature occurs frequently in varieties of Mollis and Ghent azaleas having yellow colored flowers. They are tremendously like true rhododendrons in every respect except that of evergreen foliage. Moreover, they are reliably hardy and will flourish, in suitable rhododendron soil, wherever there is sufficient water in the summer. *R. calendulaceum* and *R. molle* (or its close ally, *R. japonicum*) will endure sub-zero weather and has repeatedly blossomed for me after winter temperatures which have killed all the flower buds on *R. maximum* and *R. catawbiense*.

*Rhododendron calendulaceum* (the Flame Azalea) goes from orange-red to pure spectrum yellow and you can find forms of all the intermediate shades if you look for them among a batch of seedlings or collected plants. The pure yellow form is delightful and when planted in or among the evergreen rhododendrons produces an effect that is all that could ever be desired from a yellow rhododendron. To me, it is particularly interesting in combination with some of the very purple or lilac rhododendrons. As I have mentioned above, it frequently develops round flower clusters, but this is an individual characteristic and you must pick out your plants in order to be sure you are getting examples of this form. It is to be hoped that some method of producing own-root plants from superior clonal varieties of this species can be developed which will be commercially practicable. Grafted plants are unsatisfactory and apt to suffer by reason of insufficient passage of water through the imperfect graft union during the growth season in early summer, resulting in death the

following winter. But seedlings can easily be raised and I have demonstrated by controlled cross-pollination experiments that the yellow color of *R. calendulaceum*, when two yellow-flowered plants are crossed and protected from contamination of other pollen by means of glassine bags, will produce seedlings that are 100% yellow; in other words, it breeds true. So there should be no difficulty in producing quantities of pure yellow seedlings of this species if the nurserymen will hand-pollinate like plants and use sterile methods to prevent contamination of the cross. Self-pollination is not recommended, since it is apt to result in feeble plants or no seed at all.

Practically everything that has been said about *Rhododendron calendulaceum* may likewise be said about *R. japonicum* and *R. molle*. In their pure yellow forms they are lovely and subject to the same range of variation from yellow to red, when darker colors are wanted. The flowers, however, are larger and bear fewer blooms to a truss. While *R. japonicum* is purported to be the hardier, it is my opinion that this factor, of itself, is of little concern except in certain individuals that are definitely tender, since I have seen plenty of so-called Mollis hybrids that are inherently as hardy as the best. The matter needs further investigation, since many of the forms of *R. molle*, upon which judgment has previously been based, are grafted horticultural forms which are subject to the frailties of grafted azaleas mentioned in the preceding paragraph. Given own-root plants, proper soil and adequate summer moisture many of these plants appear abundantly hardy.

There are many excellent yellows among the Ghent and Mollis hybrids as well as in the natural species. These are usually grafted, which, as I have

said, leads to trouble in Eastern North America, and we hope another method may be found. One splendid yellow azalea, of the *calendulaceum* type but having a large, wide-open, pansy-like flower, is Nancy Waterer. A double flowered yellow Ghent is *Narcissiflora*. There are many more.

Good summer growing conditions are the secret of success in growing deciduous azaleas. Drought means checked growth and this, in turn, means susceptibility to winter injury. Many hardy azaleas are purported to be tender in regions of hot, dry weather because they die in the winter, although the real injury was sustained in summer. A heavy oak-leaf mulch and a spongy peat soil is the best means of insuring good summer growth. Leave the mulch on the soil throughout the entire year. If you must water artificially, be sure that the water is safe. In many communities the water is hard, and hard water has been known to completely ruin the acidity of a peat bed in as little as two or three applications. Some communities which experience difficulty in growing rhododendrons and other deciduous plants may trace their difficulty directly to the common water supply. A peaty soil and a leafy mulch will obviate the necessity of using artificial irrigation in most seasons.

While on the subject of yellow rhododendrons, mention should be made of the so-called Javanicum hybrids, which

represent a whole race of gorgeous tropical rhododendron, some being epiphytes, and are useful only as conservatory plants. They appear to be little known in this country, but worthy of interest.

Hardy deciduous azaleas may be interplanted with the common sorts of evergreen rhododendrons with no disadvantages, in most locations, and often with desirable effects. The plants grow to about the same stature and the massiveness of the rhododendron leaves dominates the planting to the extent that the foliage of a few deciduous azaleas will not be noticed. In winter, the deciduous plants are likewise very inconspicuous unless seen at close range. During the blooming season, the bright warm colors of the azaleas are often just the thing that is needed to give life and sparkle to an otherwise dull and ponderous rhododendron planting. No rules of thumb can be given regarding the combination of colors, but care should be taken to move out any colors which clash. When yellow azaleas with rhododendron-like flower trusses are mixed into a planting of Catawba or Maximum rhododendrons, the result is all that could be wished for, since the yellow trusses appear exactly like rhododendrons when seen from a distance and give the appearance of arising from the evergreen plants. So long as this is the case, there seems to be little reason to search for a hardy yellow evergreen rhododendron.

## Lily Notes

GEORGE L. SLATE, *Editor*

### *Lilies from Seed*

About five years ago I began growing lilies from seed on the principle that time and trouble are good substitutes for money, but also I possessed two very vigorous and (it now seems to me miraculous) mosaic-free clumps of *auratum platyphyllum*—Then came the American Lily Year Book 1940 with its terrifying information—How to preserve those Auratums and still have some other lilies? I have never bought a bulb since, though I hasten to say I am no fanatic on the subject; there are other ways mosaic may enter, I have seen it on daffodils, tulips, freesias and callas, and there are the boundless possibilities of weeds. Then also one is deprived of many beautiful hybrids, and the species which do not set seeds, or of which seeds are not available. The system, however, has worked for me—were I differently situated as regards time, space and labor, it might be otherwise.

These notes are offered selfishly in the hope that wiser readers will lighten my darkness, for I have worked quite alone, with George Slate's book as my only guide, and fear so one-sided and limited an experiment can at best serve others only as an encouragement.

Encouraging it is, lilies germinate freely and respond consistently to my few, not too difficult cultural rules; this is true of both the "quick" and the "slow" groups I have tried. I have used ordinary seed flats or bulb pans depending on the quantity of seeds, filled with a mixture of sand, peatmoss, and not too much ordinary garden soil; a fine sifting of sand under the seeds, and about a quarter inch covering of peatmoss on top; I have been careful about drainage and avoided drying out.

On the whole I have planted the seeds as soon as received, but the "early" group does best with a long growing summer ahead of it. When the seedlings crowd, they are potted singly, later planted out in cold frames with about the same soil conditions, except that leaf mold and bonemeal have been added, and a much deeper layer of peatmoss on top. There they stay until they bloom. The preliminaries all take place in my greenhouse, this is convenient but I don't believe essential.

Like everyone else, I began with *regale*, *tenuifolium*, *formosanum* (Wilson's variety). Next came *longiflorum praecox*, White Queen,  $\times$  George Creelman, *candidum Salonikae*, *centifolium*, *auratum platyphyllum*. More recently *tenuifolium* Golden Gleam, *amabile*, *cernuum*,  $\times$  Maxwell, *superbum*, *Humboldtii*, *auratum pictum*, *monadelphum*.

The white trumpets were all eager and easy in infancy. *Formosanum* will bloom on slender stems in six to eight months, but these blossoms are not much, and I pinch them off as tiny buds; from this time on it increases furiously for a few years, making tall splendid clumps whose successive shoots provide a very long season; in a warm climate it might be a continuous bloomer; then it slowly peters out, I suppose it should be replanted, but it is too easy to start afresh from seed. It is very easy to move, perfectly hardy, but needs to be carefully watched for aphids.

*Regale* is all that is claimed, but is it graceful? I am especially doubtful about the very lusty individuals carrying a double cartwheel of as many as forty stiff, not over-large flowers. I doubt if I shall ever sow straight re-

*gale* again, its dominating characteristics have appeared sufficiently frequently in stands of its relatives.

× George Creelman produced pure *regale*, improved *regale*, and two nearly identical specimens that till now are the high light of my lily adventure. These second generation hybrids are very robust, growing, when established, over six feet; the stems are as sturdy as trees; the leaves fairly wide, very dark green; the flowers, ten to fifteen in number, of great substance, like parchment, and well spaced in a pyramid. Best of all they carry axillary bulbils, easily grown on and sure to bloom in two years. They are of iron-clad hardness and do well in any situation with enough sun. If permitted, these lilies will set seeds, they also increase from the base, fortunately not too quickly. They appear to be long-lived.

*Centifolium* produced varied results. All were hardy, all so far have weakish stems; some are tall with beautiful flowers, some are runts; there is variety in outer coloring and date of blooming, though none are as late as I could wish. Perhaps I did not have seed from a very reliable strain. I suspect flirtation with *regale*.

*Longiflorum praecox* is well behaved as a young child, but it resents moving from the cold frame; it relishes very rich soil, hot sun and lots of water, wants not always easily satisfied; but it does best in a general flower garden, a rare virtue among lilies; is very beautiful in habit and foliage as well as bloom, which bridges the interval between *regale* and *auratum*. It is perfectly hardy; must be planted very deep or it will produce underground stem bulblets enough to smother itself.

*Candidum salonikae* is sheer delight, all we have ever thought a Madonna lily should be. Very young seedlings

sometimes damp-off, at all stages it should be watched a bit for aphids and fungi, but about two sprayings will take care of it; otherwise it is there just to be enjoyed. It blooms at the same age as *regale*, but is slower in reaching full maturity.

*Tenuifolium* is dainty and healthy, germinates very quickly but takes a year longer to mature than does *regale*. It is not long-lived. Golden Gleam has not been with me long but so far acts like its parent.

*Amabile* in youth behaves like *tenuifolium* but looks different.

*Cernuum* in youth looks and acts like *tenuifolium*, but is a fragile though not sickly child. It appears to germinate better at a higher temperature than other lilies.

Mr. Skinner's lovely hybrid Maxwill came to me late but should be one's first attempt; it is fully as easy as *formosanum*, and though it will not bloom till after the first winter is passed, then it sends up a proper spike with several blossoms on a strong stem. Though a hybrid the seedlings are absolutely uniform.

*Auratum* is eager for life, if not suppressed it would produce bushels of seeds, one capsule will about stock an acre. It is in the "slow" group. I have always planted fresh seeds in the autumn; after a while they begin to puff—hold one against the light and see the germ stretching. After some months a short, weak cotyledon appears, often not even rising above its peatmoss cover, but a decent bulb forms and good-sized roots; they must feel the cold of the first winter and then the true leaves will appear, though there are always a few forward individuals who dispense with this and go ahead regardless, and form spikes a year before their brothers. I leave *Auratums* in their original seed containers through

two summers, then pot when they naturally go dormant and plant out in the cold frame the third spring. It may not be good practice, I don't know, the bulbs become rather crowded, and pots and containers have to receive their winter chilling under salt hay in a cold passage, but eventually the larger bulbs can be planted deeper. I have so far only had *auratum pictum*, and *auratum platyphyllum*, this one from three different sources. All behave exactly alike; they are so reliable it is comforting always to have a pan of them around in some corner, like a teakettle on the stove.

*Superbum* and *Humboldtii* are my first Americans, both very slow. It is true I dare not investigate too often, but I have never seen the cotyledon; it is as though the bulb developed right inside the seed, and this only after about six months.

*Monadelphum* is a non-conformist. My first seeds looked good and came from an excellent source: exactly nothing happened. The seeds were gen-

erously replaced. I began over again with even greater care: no result. I changed the source of seeds: continuous erratic germination, at all temperatures from 50 to 100 throughout the year, and always first a small true leaf. Owing to false starts these babies have not been with me long. They seem healthy and willing, the older ones show some resemblance to little *candidum*, and their places of origin may not be very far apart. Has hybridizing ever been tried? Is such another work of art as *Testaceum* a possibility?

This is all I know. Please may I beg again for advice, and information that I do not even know how to ask for.

It is said that *Sargentiae* under some conditions sets seeds? Does *Brownii* do so? *Rubellum*, *japonicum*, *Wardii* do seed, but are the seeds procurable, and how should they be treated? What of the tender exotics, *neilgherrense* and *nepalense*?

ALIDA LIVINGSTON,  
Oyster Bay, L. I.

## Narcissus Notes

B. Y. MORRISON, *Editor*

### *Narcissus for Naturalization*

I have tried many of the newer daffodils which have become plentiful since the quarantine has been lifted and have found the following satisfactory for naturalization.

Mme. Krelage, Croesus, Helios, Nettie O'Melveny, Silver Star, Diana Kasper.

These seem to thrive as well as many of the older varieties, in fact, Helios gives a more striking effect than any other daffodil of its season.

Lucinius is a lovely thing but doesn't clump up as fast as above mentioned.

Yellow Poppy gives a different color

effect. With me Firetail is indispensable.

Most of the new poets seem to do very well but in mass effects they show no better than the older varieties.

I am trying many others but haven't had them long enough to know how they do without frequent division.

I haven't mentioned any of the yellow or bi-colored trumpets. I don't care for trumpets much for woodland planting excepting, of course, Queen of Spain which is perhaps my favorite of all daffodils for this purpose.

CARL H. KRIPPENDORF,  
Ohio.



*Mr. Krippendorf's plantings.*

### *The Daffodil*

This passage from that ever-readable book "Pages from a Private Diary" by H. C. Beeching, Canon of Westminster, should be of interest to all who grow the daffodil.

"Everything about daffodils is interesting. The name is one of the prettiest corruptions possible. It ought to be 'affodil' as it comes through the French from 'asphodel' but the parasitic *d* is a great improvement. For some time both forms were in use: affodil for what we now call asphodel or 'king's spear' and daffodil for the narcissus. The poets have liked both the word and the flower."

For more years than I can count I have grown a few daffodils; usually at first the commoner kinds like the now-tiresome King Alfred and Sir Watkin, then various species and named varieties from the great firm of Van Tubergen in Holland.

I keep a rough garden notebook in which great occurrences only are set down. One of these was in September, 1939, when there arrived from the kind hand of Mr. Guy Wilson of Broughshane, Ireland, a marvel of a present of 200 glorious bulbs of his supreme daffodils. Perhaps he was moved to send them because I had written him of my delight in the names he or others had given them—beautiful names, full of meaning or of association. (I could not imagine Mr. Wilson bestowing on any fine flower the epithet of "Dream Girl"! ) The bulbs had first to repair to Washington for inspection and treatment, but the next spring was awaited with breathless interest. Only seven flowered out of the twenty-nine varieties; but they were sufficient to show the quality of the flowers. The next year some twelve or fifteen appeared, and then in the year following twenty-one. That is the largest number thus far out of the total sent.

Then in 1940 came another of these glorious gifts—this time from Mr. Morrison himself—forty-eight varieties from his garden in Takoma Park. Every one flowered in the following season; beauties all. What generosity this was for the delight of the eye and of the gardening mind. As this garden grows older it seems to grow smaller, for where I placed these last-named daffodils roots of great lilacs began—as the man we knew in Michigan once said, to *encrouch* upon them—and this year we have had to transplant to a more open spot. But every bulb bloomed, and great has been my pleasure in them. Also, from another friend came February Gold, the earliest one I have here—possibly because of its position, too—while a mixed bushel from the Misses Harris of The Plains, Va., do wonderfully on a sunny slope below old damson plum trees, increasing with every year (although we actually run the mower over their leaves while still green). Each year I am filled with thankfulness for the blessing of such presents as these. Is there anything to equal a living, growing, redoubling gift?

With every spring I am able to send to certain city dwellers boxes of daffodil buds which, after two days' imprisonment in the U. S. post office, will always open when received. Every year there is the greatest heavenly names ring in the mind like chimes of sweet-toned bells. Polar Sea, Still Waters, Quartz, Aleppo, Killigrew, Fortune, King of the North, Kandahar, Godolphin, Cocarde, Tenedos; they are like those "seven sweet sympathies" of the Rosetti poem. My thanks go out again with each successive spring to these two friends who have shown me such daffodil kindness, one in Ireland, one in America.

The daffodil Shows of the Royal Horticultural Society in London have

continued, war or no war. Those in our own country, especially in Virginia and New York, have been truly notable. I remember Mr. John Wister as the high priest of many such shows. Perhaps the Garden Club of Michigan in Detroit was the first mere garden club to use in its small daffodil shows twenty-five years ago the classification of the Royal Horticultural Society. I think that group continues this. I have long maintained that a great international horticultural Society, such as that in London, was one of the surest paths to peace and goodwill among men; and I would urge more American memberships in this British society, more reading of its monthly Journal, more visiting of Wisley and of its constant shows in Vincent Square when such visits again become possible. The Society is truly international in membership, as all botany and horticulture are in scope, memberships are a guinea a year, and any interested person may become a Fellow by sending that sum to Vincent Square, Westminster, London W. 1.

Suddenly becoming personal, may I recount in these rather scientific pages a little incident in Holland, in the year 1925 I think it was, when I was there to serve on the Jury of the International Flower Show at Haarlem (and *this* is the international cooperation in which I most firmly believe). I was to do some professional work in writing descriptions of daffodils. A few important growers, including Mr. deGraaff of Leyden, had staged many new varieties for me to discuss; but as I sat down at my desk a group of the growers, standing in the doorway, said, "Before you begin we should like you to look at these flowers and say which you think the outstanding one." I cast a quick eye over the beautiful things before me and in an instant had singled

out a fine specimen with pale yellow perianth and much apricot in the trumpet. "That," I said, "is the one I like best." The fine Dutch growers looked at each other, smiling. "That one," said they, "we had already named for you."

A word as to the use of the daffodil in the garden. These lovely flowers can hardly expect a formal use, a setting in lines or in orderly regiments; they "haste away so soon"; but where they prosper and look their best is in long, loose drifts of colonies on slopes and under trees. Witness the beautiful photograph of William Robinson's daffodil plantings at Gravetye in Sussex, that much-printed photograph; or the nice effects in certain Long Island gardens where daffodils flourish under the young foliage of the white birch; or in the charming plantings of Mrs. Francis Hall, near Harrisburg, Pa. Here there are thirty-nine varieties or species used and these flower from late March to Mid-May. Long grass conceals later the yellowing daffodil leaves, so that they leave no trace.

LOUISA F. KING,  
New York.

#### *Daffodil Notes of the 1944 Show*

For the past two years it has been our good fortune to have two daffodil seasons, a prolonged one in Pasadena, where daffodils start blooming in January and continue into April, and a much shorter one in Oregon, where the season starts approximately April 1st and is often crowded into about six weeks. In this, Oregon always reminds me of Scotland. There, in the old days, one found early, mid-season and late varieties in bloom together at Brodie Castle during those gatherings of the Daffodil fraternity which were a regular sequel to the London Show. This over-lap in early, mid-season and late varieties is a great advantage to

the hybridist because of the increase in crossing possibilities.

It is our custom to grow all our seedlings in Pasadena where we have only a small stud of named varieties. The bulk of our collection of named varieties is at North Bank Farm in Oregon, where we also have off-sets of any of our own seedlings judged worthy of observation, as soon as stock permits. This makes it possible to complete one season in Pasadena and reach North Bank Farm with the accumulation of pollen of the season just finished in Pasadena in time to start all over again in Oregon.

This year we arrived there the 13th of April and found the beds in full bloom; not a flower faded and only the latest still to come. It literally gave one floral indigestion; and as for crosses, how can one resist scores of perfect flowers with plenty of pollen on hand?

Although the Daffodils are my husband's special hobby, it is now necessary for me to carry on for him for the duration and I really think he is rather fearful of the results four years hence. He claims we will not have land enough to plant these seeds and seedlings. I am sometimes afraid I have been slightly over-enthusiastic when I remember how Reverend Engleheart used to discourage one from trying to grow more than five thousand seedlings a year.

We have been much impressed with the different behavior of certain seedlings and named varieties in the two localities. One expects a certain variation in perfection from season to season perhaps, but it surprises me to find seedlings which have been found wanting and discarded in Pasadena, producing beautiful flowers consistently in Oregon. Then on the other hand, very nice smooth seedlings in Pasadena are

so rough and coarse in Oregon as to be almost unrecognizable. There does not seem to be any way of predicting how a given seedling will behave in a new locality. This is the case with many named varieties too. I am reminded of the fame of White House in New Zealand. It has repeatedly been judged champion Leedsii at the shows and even Champion of Champions, according to my correspondent, Mr. C. G. Hayes of Invercargill, New Zealand. He can not praise it too highly. Now, White House is a nice flower, but it is far from flawless or best of its class here. I understand that this holds true in England also. Yet it wins all honors year after year in New Zealand against things that surpass it here.

Perhaps the most arresting things in Oregon this year were the Red-Cups. They were simply blazing. Of the newer red-and-yellows, Sudan, Bahram and Gibraltar were outstanding. It is hard to see how anything could be more perfect than Gibraltar although it has the shortest stem of the three. If only it had the stem of Peiping or Hong Kong. Otherwise it was vivid, sculptured perfection, and it did not burn. Of the older red-and-yellows, Dunkeld, Caerleon, Carbineer, Market Merry and Rustom Pasha were particularly good. One of the Brodie's older seedlings, Red Ribband, was very impressive and made a wonderful garden clump. It is a very strong and tall deep yellow with a wide, definite red ribbon band at the edge of the straight bowl cup, very bold and telling. Another stunning garden plant was Pierrot. Its perianth is paler than in the others, but the cup is most intense and the reflexed perianth is graceful and attractive.

I hesitate to mention seedlings of our own in this august company, but I noted with satisfaction that one of our

1937 crop was giving a good account of itself. It is not named as yet, so must be simply Number 259, Trevisky  $\times$  (Bokhara  $\times$  Warflame), the 259 has many good points; good color, adequate stem and a short neck. I remember with even greater enthusiasm a red-and-yellow seedling in Pasadena, Number 288, Stirling  $\times$  Cornish Fire. It has not arrived in Oregon yet, but we hope to have it there soon as it is very perfect in Pasadena.

We had an interesting first bloom this year; a small vivid cyclamineus hybrid with the characteristic intense yellow reflexed perianth, but with a glowing solid red cup. This small, attractive thing is (February Gold  $\times$  Fortune)  $\times$  Pentreath. How potent the cyclamineus strain is to give such characteristic form in the fourth generation. We have raised many cyclamineus hybrids and the percentage of acceptable flowers is so high that I urge beginners to use cyclamineus pollen widely. One can hardly fail.

There was a decided color break among our seedlings this year which may prove interesting. Pepper  $\times$  Cornish Fire gave a flower with a pinkish bronze perianth and a brilliant red cup. Personally, I do not care especially for Nanking and similar flowers, but this seedling seemed so much deeper in color than any of that class which we grow that we decided to exploit it to the full and have a large crop of seeds, mostly from its pollen.

Of the red-and-whites, Red Hackle was clearly the pick. It was superb. Its form is reminiscent of Folly, but the perianth is very white and the cup is unbelievably red. It did not burn and was very durable. Cairo was also outstanding and is very late. Mahmoud was beautiful, but could do with a stronger constitution. Khartum and Kilworth finally were very telling, but

the Oregon season was very wet and it took some time for their perianths to get really white.

My own favorites are the whites and pale Leedsii and these are particularly happy in Oregon. It would be impossible to rate them all, there were too many good ones. Perhaps Truth was the most consistently perfect. It is not over-large, but has such finish. I can not find a flaw in it except that it does not like the hot, dry climate of Pasadena. Courage was superb, as were Cantatrice, Ledbury, Trostan, Oslo, Zero and Ludlow. The last named was especially good from round bulbs. Trousseau was lovely, but at North Bank Farm it was not pink this year. I will hope for another time. Content was very nice although I expected it to be more definitely "lemon-ade" colored. Glendalough was certainly a fine strong Leedsii and Broughshane was almost too big. It is a wonderful white and very long lasting. Brunswick, Polindra, White House and Carnlough were excellent and in good number and have been heavily used in breeding. I must not omit White Butterfly which was one of the most charming flowers. It is well named and will make a wonderful garden subject.

There were several very interesting white seedlings of our own. Number 110, a pure white, very flat Leedsii, gave an impression of great roundness. Number 163, Marmora  $\times$  Carnlough, was icy white and rather like Oslo. Number 128, Sherman  $\times$  Kencott, has quite a good perianth and a really pink cup. This is our best pink to date and it has been consistent both in Pasadena and Oregon. Number 229, Le Voleur  $\times$  Pucelle, is a large Leedsii with a white perianth and straw-colored trumpet upon opening, but the trumpet ages pink in a very short time. It is really lovely, smooth flower, but is so

slow of increase that we have been unable to get an off-set for Oregon after three years. We hope to get one this year.

Of the yellows, St. Issey was outstanding. It has given us splendid seedlings. We have a whole series of Aerolite  $\times$  St. Issey that are hard to choose between. We have named one of these Temecula and there will doubtless be several others worthy of a name, varying between Incomparabilis and Trumpet. St. Issey selfed has given us the best flower we have raised. It is an incomparabilis and the deepest yellow I have ever seen. We have named it Geronimo.

Stirling has been a wonderful parent. It is a Pilgrimage seedling raised by J. Lionel Richardson. It was so similar to its parent that Mr. Richardson sold us the entire stock. It has given the toughest, strongest flowers imaginable, with tall, strong stems, many with the characteristic pointed double-triangle perianth of Pilgrimage. We have used it in numberless combinations and have many fine seedlings from it.

In Oregon, Balmoral was exceptional. Cromarty and Crocus were also noticeable although Crocus needs a longer stem. The older varieties, Principal and Royalist, were smooth and perfect. I must not forget to comment on Christian and Yellow Moon. Both are small in comparison with the above, but they have great charm, I like them both enormously.

I am leaving out of these notes many splendid flowers which we saw blooming, the poets for instance. But how can one hope to cover such a vast field in such a comparatively short time? Especially since an untimely hot spell put an abrupt end to the season. I found myself with only a hazy memory of the relative worth of many that I had meant to observe more closely. Two of those late varieties were impossible to miss however. Who could overlook Alberni Beauty with its glistening white perianth and the deliciously cool and perfect Cushendall with its wonderful green center? They made a perfect ending to our second season!

MRS. KENYON L. REYNOLDS,  
Pasadena, Calif.

## A Book or Two

*The Border in Colour*, by T. C. Mansfield, 1944. E. P. Dutton & Co., Inc., New York City. 236 pages, illus.

It is fortunate that color like music speaks an international language that all may understand and enjoy, and the only regret here is the considerable discrepancy between the quality of the color work and the importance of the text, whose usefulness to American gardeners will doubtless be quite limited.

As this is the third book of a series it naturally follows much the same scheme in handling of its data. About 35 pages of brief elementary treatises on soil, site, maintenance, propagation, and pest control, mainly of interest to the beginner, are followed by 189 pages of what is called a "Glossary," wherein herbaceous garden material is listed alphabetically from Abrovia to Zauschneria, with one to eight lines devoted to each variety, part of the information reduced to abbreviation or code. It will

thus be seen that the work is intended mainly for reference rather than continuous reading.

That "East is East and West is West" would seem to be borne out in the selection of varieties for inclusion which, as one might expect, is distinctly British. Many of the items would be difficult or impossible to find in American catalogues.

Some measure of the book's interest to American gardeners may be gathered by considering its treatment of the genus *Iris*. There are 48 *Iris* species listed, but under *I. Germanica* there follows "a list of the horticultural varieties developed from this *Iris*." Of 42 varieties named in this list most are such older things as Alcazar, Aurea, Caprice, Ed. Michel, Gold Crest, etc. The most recent introduction well known to this country is Gudrun, 1930, and the only American varieties mentioned are Afterglow, Sturtevant, 1917, and Quaker Lady, Farr, 1909.

Under *Hemerocallis* we find 5 species included, with Apricot, Golden Bell, Hyperion, Orangeman, Sir Michael Foster and Sovereign as the complete list of "good examples" of *H. hybrida*.

The author would seem to have some strong garden preferences since in contrast to this relative paucity of *Iris* and *Hemerocallis* there are listed no less than 120 varieties of *Chrysanthemum morifolium*, 102 of *Lupins*, 73 of *Delphinium* and 42 of *Dianthus*. Even of *Astilbe* there are 28, but only 27 of *Peony*.

Chief attraction, however, are the 80 fine color plates. The 22 line drawings are more decorative than consequential, but the printing job on the color plates is superb. Labeling of these is unique but somewhat precarious since it depends on a loose-leaf transparent sheet marked with twenty

lettered squares to be superimposed on the color plates to aid in location and identification; precarious because of the ease with which a loose sheet may be mislaid or damaged. And I must confess it is a bit startling to read at the bottom of a plate something like this: *Astilbe hybrida* Fanal BCDFGHKL-MOPQTU, or *Lilium auratum* ABC-EFGHJKLMOPQ. That does seem a bit cumbersome, and perhaps not quite necessary, but the excellence of the color printing may warrant inclusion of this book in any horticulturist's library.

J. M. S.

*Commercial Flower Forcing*, by Laurie and Kiplinger. 4th edition. The Blakiston Co., Philadelphia, 1944. 598 pages, illustrated. \$4.50.

This useful manual has suffered no major changes in plan or development. It has been brought up to date, however, in order to incorporate data recently available, on gravel culture, fertilizers, temperature control, humidity, growth promoting substances, advanced practices in propagation and similar features. No matter how useful other editions have been, this will replace them all.

*Pest Control in the Home Garden*, by Louis Pyenson. The Macmillan Co., New York, 1944. 190 pages, illus. \$2.00.

This is a handbook of ready reference, carefully planned for and addressed to the large gardening public. The text is simple and forthright: the many illustrations should be of the greatest value to the readers addressed. If they cannot find help in this for all their major difficulties, there is not much chance for them.

The field covered is restricted essentially to plants of the home vegetable and fruit gardens.

*Thomas Jefferson's Garden Book Annotated*, by Edwin Morris Betts. The American Philosophical Society, Philadelphia, Pa., 1944. 794 pages, illustrated. \$5.00.

This volume represents No. 22 of the *Memoirs of the above Society*.

To quote from the Preface: "This *Garden Book* contains the most varied entries of all of Jefferson's memorandum books. The book that began as a diary of the garden became a written repository for numerous interests of Jefferson\*\*\*.

"The varied entries in the *Garden Book* not only show us what Jefferson was doing and planting at *Monticello*,

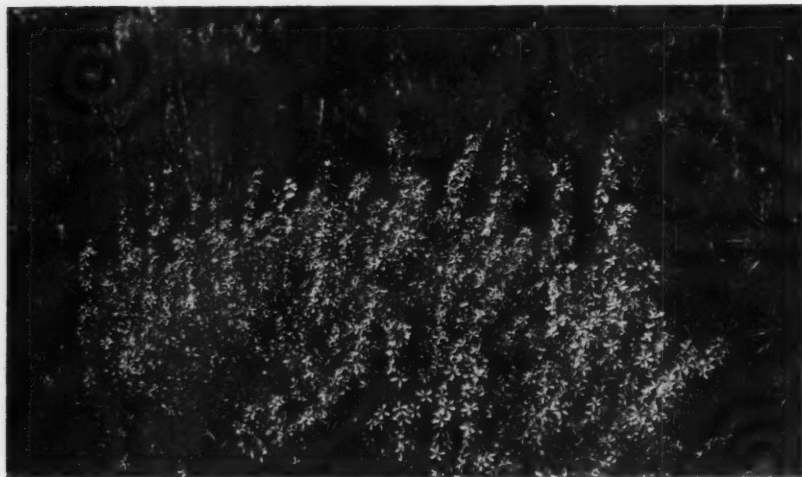
*Poplar Forest*, and his other estates, but also give us a clue to his interest in introducing new plants and in improving horticulture, viticulture, and many other aspects of the rural life of his time\*\*\*."

"That those interests at *Monticello* were also tied up with the agricultural and horticultural needs of the United States, is shown in part by Jefferson's attempt to introduce the cultivation of olive trees and dry rice into South Carolina and Georgia\*\*\*."

And so one might continue, even to the whole of the Preface.

It is a book to read and not read about.

## The Gardener's Pocketbook



*Prunus Skinneri*

*Prunus Skinneri* (Rehder)

In Western Canada, where the choice varieties of ornamental Cherries and Almonds, that are so largely cultivated in Western Europe and the Eastern States, are not hardy, we are

finding that some of the hybrids of *Prunus tenella* are highly ornamental.

Our photograph shows one of the more recent of these hybrids, having as its other parent the Manchurian *P. japonica*. This hybrid, raised at



Kathleen Marriage

*Penstemon humilis*

Dropmore, grows considerably taller than either parent; the original seedling being now six feet tall and fully as much across. Both in foliage and flowers it is intermediate between the parents. The fruits, very sparingly

produced, are like small green apricots, half an inch in diameter, while those of *P. japonica* are quite smooth and a brilliant red in color.

The flowers of *P. japonica* are hidden to a certain extent by the foliage,



Kathleen Marriage

*Penstemon humilis*

while those of the hybrid are all readily visible and a bright rosy-red in color.

It comes into bloom about two weeks later than *P. tenella* and stays showy much longer than the more fertile parents.

F. L. SKINNER,  
Dropmore, Manitoba.

*The Blues*

*Penstemon humilis* is taking its last stand now (June 27). A few weeks ago the lower foothills, 7,000 feet altitude, were pouring out their blue lavishly from groups of Scrub Oak and Pine.

Yesterday I found a hillside near Divide on the Rampart Range (9,000 feet) where this *Penstemon* flowed over several acres and only stopped where

the hill descended into the valley. Groups of Ponderosa Pine provided a backdrop for this scene, their shadows intensifying the blue around the edges. Lest such a large canvas of all blue surfeit the eye the Master Painter relieved it with occasional splashes of the most vivid scarlet, using Indian Paint Brush (*Castilleja collina*). Words are inadequate; and to photograph this blue and scarlet combination? Just try it! How to catch on any film the clear crispness of the air, the song of the meadow larks, and across the valley, the huge bulk of Pike's Peak, the wrinkles on his face still filled with snow.

To enjoy this breath-taking beauty it is only necessary to leave the trans-continental highway, number 24, roll



Kathleen Marriage

*Castilleja collina*

under a rather forbidding barbed wire fence, walk a few hundred feet up to the brow of the hill, when suddenly at one's feet, there it is.

To grow Rocky Mountain plants in the garden only one bit of information is really essential. Are they found on a north or south slope? There is a wide variation in conditions between the two. Both slopes are porous gravel and rock, the south having meagre soil, if any, the north having surface humus in varying depths according to the snowfall, and consequent vegetation.

This hillside of *Penstemon humilis* faces south, is too poor in soil to grow decent grass, hence the opportunity for flowers. The ground is about half covered with the glossy basal leaves of penstemon. The next scene on this hill promises to be spectacular and different, for scattered thickly among the flowering penstemons are plants

in bud of *Aragallus lamberti*, a "loco" which will make a big splurge in rosy purple. But to get back to our garden. Most of these south-slope things propagate more or less readily from seed, and will grow and bloom well in the rock garden if drainage is adequate. They all hate a damp collar when they have finished blooming.

The Scarlet Castilleja, like its sisters, is parasitic, or partly so, which necessitates supplying its host. The sure way is to cut about a square foot of sod containing the plants surrounding the Castilleja, fasten it securely in moist burlap, and keep it moist till planted. Keep to the Zombie rule, only two to each person. One botanist suggests that a *Chrysothamus* is a host for this *Castilleja collina*. Will someone who has time and patience please sow seeds of both together and report results?

KATHLEEN MARRIAGE,  
Colorado Springs, Colorado.

*"It's Alive."*

Without any fear of contradiction we nominate the subject of our present illustration as the oddest of odd plants, at least among those growing in the Strybing Arboretum and Botanic Garden at Golden Gate Park. At first glance it is indeed difficult to tell what it is, or whether it is indeed alive at all. This is *Homalocladium platycladum*, also known as *Muehlenbeckia platyclada*, both names a good mouthful, perhaps designed to discourage beginners of the study of Botany, but scarcely easy to remember. The common names "Ribbon-bush" or "Centipede Plant" help very little, but it prove interesting to know that this is related to the Buckwheats, and that the genus *Muehlenbeckia* includes the New Zealand "Wire-vine," (*M. complexa*).

Our picture clearly shows the queer flattened stems that function as leaves after the true leaves have dried up and fallen off. A few of these true leaves may be seen too, but are present only on young shoots during moist seasons.

The main interest of this plant though at this time arises from the fact that it is the only native to the Solomon Islands that may be grown out-of-doors here without serious frost-injury through most winters. In Southern California this plant is frequently grown for covering banks, or as an informal hedge. When covered with its small red, berry-like fruits the plants are quite ornamental. Propagation is easily accomplished by rooting cuttings in a warm greenhouse.

ERIC WALTHER,

Supervisor of the Strybing Arboretum and Botanic Garden,  
Golden Gate Park, San Francisco, Calif.

*Two Malpighias*

*Malpighia glabra* L. "Wild Crape-

myrtle." This interesting species belongs to a family represented by some 40 species throughout the lower Gulf Coast region and into Old Mexico, as well as near by islands, where it is represented by the indigenous Barbados Cherry, *Malpighia glabra undulata*.

In gardens of the South this charming shrub forms a low dense mass of glabrous foliage; brown bark and withe like branches, crowned throughout the summer months by axillary cymes of attractive rosy pink flowers, somewhat resembling Crapemyrtle (*Lagerstroemia indica*) which are followed by bright scarlet fruits, resembling ripe cherries spoken of as a "delicious acid fruit."

It may be interesting to note, that while this plant came to us as *Decodon verticellatus*, the writer was approached by Miss Alice Eastwood, in the Academy of Sciences in Golden Gate Park, who asked if my name was Teas, and remarked that she had received a botanical specimen from some one else, who in turn had received the plant from us as *Decodon verticellatus*, which she stated was incorrect, and held in her hand herbarium specimens of the latter, but identified as *M. glabra*. Some years later I discovered a very upright growing form in the gardens of Corpus Christi, Texas, and on investigation learned that this upright form is the type, *M. glabra* and that the one generally found in cultivation is the variety *undulata*.

This latter form lends itself admirably to forming formal hedges and may be clipped into perfect shape at any desired height and yet be trained into columns, or arches of formal outlines, with equal grace and most pleasing effect. The upright form is equally pleasing as a rather neat slender upright growing shrub producing masses of attractive flowers and red cherries



*Eric Walther*

*Homalocladium platycladum*

[See page 72]

throughout the summer months.

These shrubs deserve special mention and should find a useful place in the gardens of the South, as specimens, mass plantings or trained to develop accents in those weak spots, which frequently give grave concern to the builders of gardens.

*Malpighia coccigera* — (berry-bearing) from the West Indies is a charming little evergreen shrub with small spiny Holly-like foliage, virtually covered at frequent intervals with attractive light pink flowers, followed by showy scarlet fruit, like ripe cherries.

As a pot plant, it grows in tree form like that of a picturesque old New England elm, with drooping branches, yet only a foot or two in overall height. While rarely seen in garden collections it is recommended in Florida for hedges. It is conspicuous for its unique individuality and charming habit, and elicits many compliments from visitors.

EDWARD TEAS,  
Houston, Texas.

#### FROM THE MIDWEST HORTICULTURAL SOCIETY

##### *Viburnum Carlesi*

One of the most useful viburnums is *V. Carlesi*. This *Viburnum* with its clusters of fragrant flowers, blooms here about the first of May. The scent of the flowers is delightful, and the effect of the pinkish clusters on the plants is good.

After the flowers have gone this is a fairly coarse shrub of medium stature. It is suitable for mingling in the mixed shrub border. Like the other viburnums it is not particular in its cultural requirements. The foliage is dark and green and rugose, reminding one of its relative *V. lentago*.

There are improved varieties of this species appearing on the market which differ in flower color and fragrance and some other minor characteristics.

Price and preference would determine the selection of these.

There is always the problem of how to handle a coarse-leaved plant. While exceedingly beautiful in flower the wrinkled foliage is apt to be quite bold in many situations. As suggested above it seems best to use this as a component of a mixed border where the foliage can serve as a foil for either smaller leaved or yellowish leaved plants.

##### *Syringa persica*

One of the interesting developments in recent years has been the appearance on the small plants of *Syringa persica*, Persian lilac, at roadside stands. They are seen as small balled plants three to four feet in height and in full bloom. While this treatment of nursery stock leaves much to be desired yet this has served to disseminate the species quite widely. Being of a robust nature probably most of the plants so handled, and frequently mishandled, have survived.

This, in my opinion, is the best lilac for the home garden. Its medium stature, precocity of flowering, and shrub-like habit are all much more desirable in a small area than the common species. Immediate effects are obtained with the plant. As a source of cut flowers the numerous branches are excellent.

In large gardens where the choicer sorts of French hybrids may be grown for effect the use of this in a cutting garden would doubtless be well worthwhile.

The culture of this is not exacting. Pruning can be done at flowering time and serve a double purpose.

There is some variation in the flower color and plants can be selected that have pinkish tints and others that are deep purple with the majority being a good lilac. Some nurseries are offer-

ing such color selections, while a pure white is offered at others.

This species is not at all new to this region. It was widely used in plantings made more than forty years ago. However the roadside merchandising of this plant within the past half dozen years has been significant in making it one of the common garden plants in this region.

#### *Ulmus glabra Camperdownii*

The use of horticultural oddities has resulted in the overdoing of some types of material such as the globular small trees. In this region the ones usually encountered are the weeping mulberry frequently pruned to a globular or canopy-like head and the umbrella catalpa. Both of these have been used too much as accent plants and have tended to discourage the correct use of plants of this type. The mulberry, unless frequently trimmed, grows quite long and strategy and fails to be symmetrical, while the coarseness of the catalpa foliage is a drawback in small or intimate gardens.

One tree which fulfills the purpose of an accent without the obvious drawbacks of the previous two is the umbrella form of the Scotch elm. The foliage is very similar to that of the native elm. As seen in this region this elm is topworked on native elm at a height of about six feet. The branches are rather stiff and spread out in a globular head that stays within reasonable limits without too much attention. Occasional pruning preserves the compactness of the head.

This plant has been quite extensively planted at railroad stations along the northern suburbs of Chicago and also appears in choice plantings in gardens throughout the region. Its hardiness is unquestioned and its adaptability is as great as that of the American elm.

Its use should be confined to rather

formal areas where small symmetrical material is desired. Whether all of the material in this region should be referred to the *Camperdownii* is a question that is undecided. While all of the material has been called this variety in conversations there is some question in my mind as to whether this has been entirely correct or if some of the material is not variety *pendula*. Due to the wide scattering of the material I have not compared all of them critically for varietal differences.

ELDRED GREENE.

#### *Why is a Fuchsia?*

This article prepared by Miss Alice Eastwood, California Academy of Science is reprinted by permission from the publication of The American Fuchsia Society, Bulletin 44-7, July, 1944.

The Genus *Fuchsia* was named by Plumier in honor of Leonard Fuchs who was born in Bavaria in 1501. He was not only the most learned botanist of his time but was also a physician so eminent that he was invited to become physician to the King of Denmark, but refused. His most important botanical work was a beautifully illustrated herbal which dealt with about 400 German plants and 100 from foreign lands.

The first fuchsia was collected in the West Indies by Father Plumier of the Order of the Little Brothers and named and illustrated by him in a precious old book, the title of which is "Nova Plantarum Americanarum Genera" by P. Carols Plumier. In his preface he tells of his innate desire to explore from early childhood and that these distant lands drew him not for merit, fame or riches. He could leave his home and friends, undaunted by the stormy seas, the marine monsters, the forbidding mountains and the inhospitable and fierce natives. He emphatically asserted that God called him to explore these islands. This book was published

in 1703, fifty years before Linnaeus established the binominal nomenclature and at that time each plant had but one name. If there were several of the same kind a brief description of each was given and later some one of the characteristics was chosen for the specific name. As he had found only one fuchsia which he described as with three leaves and red flowers, Linnaeus named it *Fuchsia triphylla*. Besides Fuchsia some of the well known plants of the West Indies were named and illustrated by him in this old book.

The English pronunciation is as if it were spelled fushcia and that has become the common pronunciation. In German it is pronounced as if spelled fooksia. According to some authorities that should be the scientific pronunciation.

The fuchsias are members of a large family of plants, known commonly as the Evening Primrose Family. This family is especially common in the western hemisphere and is notably represented in our gardens not only by the fuchsias but by some of the most beautiful and widely cultivated annuals, such as Godetia, Clarkia, and the Evening Primrose. The magenta-flowered fireweed, also called willow-herb, is the most widely spread member of the family. It is known as fireweed because it springs up abundantly where forests have been destroyed by fire, and the name willow-herb arises from the tuft of hairs on each one of the seeds which, like the seeds of the willows, are wafted like little parachutes through the air to the place where they can sprout and grow.

The members of this family are on the plan of four, with four petals, four sepals, four or eight stamens, and the seed vessel below the calyx. All but the fuchsia have a dry seed pod, that splits when ripe into four parts. The

fuchsia is the only member of the family that is a shrub, has the fruit like a berry, and a calyx colored like a corolla.

Some are natives of Mexico and these generally have small flowers, like *Fuchsia thymifolia* and *Fuchsia arborescens*. Those of the *Fuchsia triphylla* group are from the West Indies, but most of the species are from South America, chiefly from the upper altitudes where the climate is temperate.

#### *Galium verum*

Among European introductions that have become so thoroughly acclimated in this country as to be generally considered natives (even to being weeds), is the yellow "Ladies Bedstraw"—*Galium verum*.

Bailey says of it that it is now a weed in fields of our Eastern coast, but one can go further, for it has crept up into the slopes of the Blue Ridge Mountains, and now and then into a garden. There it has proved its worth to such a degree that the wonder is that it is not more widely known and used.

Botanically, Bailey says of it:—"Perennial from a somewhat woody base, glabrous and smooth; or the edges of the leaves roughish: stems decumbent or ascending, tufted, 1-3 ft. long: leaves in 8's or 6's, linear  $\frac{1}{2}$ -1 inch long, bristle-tipped, panicle ample, its lower branches exceeding the leaves: flowers yellow, blooming all summer: fruit small, smooth."

Translation of this into garden language can give the over-busy (possibly lazy) amateur a more enticing picture of what a high-ranking addition it is to either the herbaceous border or the rock garden.

The tiny, lemon-yellow florets are borne in masses of fluffy, dense, 6-8 inch panicles, growing so profusely that they make a sheet of color for about

six weeks. The stems, clad in light green, small, narrow leaves are prostrate for about half their length, becoming erect for 12 to 15 inches, the root stock is spreading, though not dangerously so, and easily controlled, but growing fast enough to soon clothe a bare spot. One of its greatest assets lies in the fact that after blooming it shows no untidiness of dead bloom that must be cut away, this owing to the diminutive nature of the seed pods; and the whole plant at once acquires a soft, clean green that is a perfect ground cover. Furthermore, as a cut flower, it is invaluable. It is indifferent to drouth and heat, or to temperatures as low as 15° below zero.

VIOLET NILES WALKER,  
Woodberry Forest, Va.

*Amaryllis Experiment: Growing Them  
Outside in the Southwest*

My experimentation in growing Amaryllis outside began more than eight years ago in the semi-arid region just south of Oklahoma City. The real seed of my experimentation enthusiasm began, however, in 1936 when I had the pleasure of witnessing real Amaryllis magnificence at the Department of Agriculture's Amaryllis show in Washington, D. C.

It would be impossible for me to try in words to reproduce my reaction to that display. I knew that the flower was being hybridized extensively and that selective breeding had made great strides in recent years but seeing in reality such dazzling beauty was a rare revelation to me. It was as if I had been dreaming a story and there it was before me, dramatized in technicolor.

Even before I had "drunk my fill" of that Amaryllis show, I sought out the Superintendent of Greenhouses and Grounds. There were hundreds of

questions I wanted to ask him about their care, soil preparation and all. I wanted to *grow* Amaryllis. Not only that, but I wanted to grow them in my *outside* garden.

I returned to Oklahoma with 4 trial bulbs and carefully planted them in 6-inch pots of soil composed of sand, well decayed dairy barn manure, and some good garden soil. They thrived apace.

Next Spring, a year later, I planted them outside, one bulb in full sun, the others in partial shade. They were planted perhaps two and one-half inches below the ground and were mulched just a little. To my amazement, all bloomed nicely and produced seed from hand pollination. Alas, however, I was set back again that winter to the beginning of my experiment, because all bulbs were winter killed.

That experience taught me lesson number one and I concluded that deeper planting and heavier mulching might be the rebuttal for those periodical, roaring "Northers" which bring unannounced sub-zero temperatures to Oklahoma in winter.

I procured six good bulbs this time and planted them again in pots because that much of the original experiment was good. And I was right because all bloomed with well formed flowers. Two of this second try in particular were beautiful specimens; a pink-striped white one, and a very beautiful red one. Others were cross pollinated. From this second effort came seeds galore which I collected and planted in flats in my small greenhouse (which really is a hybrid in itself, being half greenhouse and half pit). This was about July 15.

Notwithstanding the architecture and condition of my greenhouse, a good germination resulted in hundreds of precious seedlings which lived and thrived in the glass covered beds. I

felt that I was getting a little closer to the answer.

For two winters I kept them there, dosing them occasionally with liquid manure and now, after 18 months, I moved them to their permanent home—outside, to withstand, I hoped, the general climatic extremes and severity of Oklahoma in particular, the Southwest in general.

They were planted in rows, and depending on the size of the bulb, from 3 to 6 inches below the ground, about 8 inches apart in an open frame of scrap material. I found that this "bailing wire" frame also served to contain the three inches of dairy fertilizer with which I mulched the surface. And all during the summer these bulbs were kept well mulched with manure and carefully watered when the soil became too dry for a healthy growing condition.

During the summer and fall the growth was most vigorous, some bulbs having made from 2 to 5 offsets. Then with the first killing frosts, which occur in Oklahoma approximately November 10th, I covered these outside beds with another layer of manure and heavy straw. And as the "nights lengthened and the cold strengthened" I could only hope for the best for their first winter outside.

It was cold for unusually long periods during that particular winter with late killing frosts about the 10th of April. I had purposefully refrained from peeking and when I did remove the mulch, toward the end of April I was amazed and delighted to find healthy foliage tips popping up in every corner of that makeshift seed bed.

That season about 20 of the bulbs bloomed and they were outstandingly nice flowers. One in particular I recorded. It had tall, strong scapes, a wide open flower the color of a silver

gray theatre curtain under a red spot light. This amaryllis was self pollinated.

The bulbs at this time were 3½ years old and they were all from seed. As an interesting sidelight it should be noted here that the bulbs from the same seedling which I kept in the greenhouse for comparison, bloomed just two weeks earlier than their outside sisters. These greenhouse plants were kept in growing condition, except January and February when they rested. And it is interesting to note here that the outside plants bloomed in exactly the same ratio of blossoms per plant, as those hearties who weathered the winter outside.

The first flower to open for the outside debut was the usual chalky white, rose-tipped one with a short tubed, open flower; not very attractive but extremely fragrant. Others, much better followed in the bloom profusion.

Then about the 12th of May, there it was in full flower, the compensation for my three season effort. It was an amaryllis of the daintiest mother-of-pearl shade I have ever seen. On top of this pale pink were splashes of rose, an almost grayed rose, fading into the pink yet making a perfect complement to it. And there were three of them. I was sorely tempted to cut my prize and take it in the house so that I and mine might enjoy every moment of it.

And as it turned out, enjoying its last moments would have been a wise course because that very night the worst hail storm on record turned my garden, amaryllis and all, into something that looked like a plateful of left over spinach.

Of course the curtain fell but the short lived symphony in pearl pink more than justified the effort, which indeed is a point of view that only an amaryllis grower can understand. I

might add that it is well that "hope springeth eternal" because I am figuratively fainting to see what the Spring of 1945 may bring from those seedling bulbs, of which it is now known, can withstand most anything in the way of Southwest's climate severity, except Oklahoma spring hail.

And from the look of broken glass, it is my firm conviction that not even my greenhouse can withstand what we in Oklahoma call "hen-egg" hail.

STELLA HAYDON,  
Norman, Okla.

—and Here We Have Idaho

Here we have Idaho, where men are men and women are—well, women are the same as they are the world over, just what the men expect them to be. A land of magnificent distances, wide open spaces, hot days and cool nights in Summer with cold and clear days in Winter. A land of mountains and lakes surrounded by the eternal peacefulness of the forests, also a land whose mountain sides are covered in the late Spring with what appears to be drifts of snow, but in reality it is the Idaho State flower, *Philadelphus Lewisii*, commonly known as Syringa.

This very lovely shrub which grows so profusely in the Aspen and Spruce belts of Payette and Sawtooth National Forests and is adaptable to different soil conditions is ideal for foundation planting or as a specimen. There seems to be two types of this, both white-flowered, one blooming with large solitary flower of great beauty, the other being cymose. Both types have a sweet heavy fragrance that rivals Matchabelli's. An especially beautiful large flowering form grows in profusion in the canyons along the Weiser River.

The trimming of these shrubs should be done immediately after the blooming season when they can be trimmed and

shaped to suit one's fancy. When planted with other shrubs they have a tendency to grow straight up, but when planted alone are more bushy. Free and easy growth.

If you are looking for something lovely or different by all means try this Idaho State flower, *Philadelphus Lewisii*.

Of native spirea, Idaho has several species, but those that are most often transplanted and cultivated are *Holodiscus discolor*, and *Spirea Idahoensis* and *lucida*.

Of these three, *Holodiscus discolor*, or as it is most commonly called, Ocean Spray, seems to be the favored one, and the best specimens are brought down from the Salmon River district. The average height is about 6 ft. and when in bloom the many long sprays of feather-like blossoms of creamy tint add distinction to any planting.

*Spirea Idahoensis* is a very compact bush of about 3 ft., coming into bloom about the first of June and is a bright rosy-pink in color. While it is hard to distinguish *Spirea lucida* from the foregoing as to foliage and form of growth, it blooms about three weeks later extending the blooming season well in to Fall. It is also pink in color but not so bright in color as *Idahoensis*. All three are well worth while, doing well with ordinary culture, and should be trimmed heavily in early Spring.

Idaho is famed far and wide for her many varieties of native wild flowers and out of over 2,000 there are no less than 1,500 listed as valuable for home plantings. Many of these, while often difficult to transplant, are easily grown from seed. Hillsides covered with lupines ranging in color through all the shades of blues, patches of rosy purple cleomes and, what we call sand pinks, interspersed with patches of green, form a tapestry-like landscape, that no

one but Mother Nature could create. Beautiful and intricate in design are such displays.

Many rare varieties of the penstemon are native to Idaho, over 20 species growing in and around Midvale. Of these, for our rock garden we would choose first, *Penstemon Hendersoni*, with its beautiful rosy pink flowers. If one would have this low growing, it must be planted in poor soil and kept dry otherwise it will attain a height of about 3 ft. When about 6 in. in height the plant should be pruned back at least half. This variety is one of the most beautiful specimens for rock plantings. Other penstemons well worth getting acquainted with are the species *Scouleri* and *fruticosa*, both being of the shrubby type. The former has flowers of a clear lavender tone while *Penstemon fruticosa* is of a pinkish lavender color. Both are of about the same height, that is from 6 to 8 in., and are June blooming.

There are a number of Eriogonums in Idaho, but only one we know of that is ideal for the rock garden and that is *Eriogonum umbellatum*. This is free and easy of growth and is covered through July with a wealth of golden yellow blossoms, being as beautiful and effective as the once so popular *Alyssum saxatile*.

Another yellow blooming plant that we are especially fond of is *Eriophyllum pedunculatum*. This grows to a height of 12 in. having silvery gray foliage and deep yellow daisy like flowers. July blooming. A good companion is our *Erigeron linearis* with its violet daisy-like flowers on 6 in. stems emerging from heavy tufts of foliage. These require only ordinary soil.

In selecting wild flowers for one's rockery, the delphiniums should not be overlooked. The best of these being the most dwarf *Delphinium Leonardi*.

Only 5 in. in height it is of such brilliant deep blue coloring and of such profuse growth, that patches of bloom covering the lava hills can be seen a long distance. The blossom also has a nice white bee.

Another delphinium that is more rare, but not lovelier, is the *D. columbianum*. This is also found growing on our lava hills, is of deep blue coloring and grows about 12 in. high. These should both be planted in hard rocky soil.

A good blue bell and a bonny one, is *Mertensia Honeri*, which grows 6 in., and of a beautiful clear sky blue in color, often flushed daintily with pink. These should be planted in full sun.

Scotland may have her blue bells but Idaho also has her yellow bells, that seem to be cut out of Idaho golden sunshine.

These are the *Fritillaria pudica* that cover our sandy hills, growing about 7 in. tall, the blossom being a bright golden yellow bell about an inch long. Children roam the sand hills back of our own town here, gathering huge bouquets of "yellow-bells."

For another blue flowering plant, we would choose *Sisyrinchium Idahoensis* (these botanical names!!!!), which is just another name for the lovely blue-eyed grass that covers waste pastures and rocky hills. This has heavy clumps of grass-like foliage covered with bright blue star-like blossoms. Should have heavy rocky soil.

As we cannot go on forever like one of Idaho's many mountain streams we will close our list of selections with the mention of the so early spring beauty *Dicentra Cucularia* or as it is commonly called Dutchman's Breeches. Why Dutchman's breeches, we wouldn't know, as it has racemes of most delicate pink heart shaped flowers and dainty feathery fernlike foliage.

These are for cool shady spots, under shrubbery and secluded nooks or fairy gardens.

We find them growing along our shady mountain streams, often nearly hidden by riotous growing ferns in their extravagant height of six feet, even exceeding that at times until one wonders if they are trying to rival our forests with their feathered greenery. This list of Idaho native wild flowers was selected for their value as plants for your rock garden. If you are looking for something to give it a lift, do not overlook these perennials.

MARY FRANKS THARP.

#### *Colchicums*

An ideal way to grow *Colchicums* is to plant them in the woodland as in most other places they are bad garden material on account of their coarse foliage in the Spring. When the foliage is upright it is rather decorative but when it falls over it's a problem on the border. But in the woodland it does not make much difference and large drifts of the flowers in September give a wonderful effect, especially in the last hour or two of sunshine.

The bulbs seem very longlived. I have had clumps down for over 30 years which still throw dozens of flowers. The flowers are also very good for cutting as they will last a week if cut when fresh.

They are obtainable in white and all colors of purple from palest lavender to deep purple.

CARL H. KRIPPENDORF,  
Ohio.

#### *Correction*

Mr. E. D. L. Seymour informs the editor that the citation given in footnote, p. 234, last issue, is incorrect. Mr. Nearing's work was first reported in *The American Home* April 1939. Close going gentlemen!

#### *Seedling Magnolias*

Although the native magnolias have always seeded with more or less abundance, the Chinese magnolias have been less certain in these parts due perhaps to the temperamental early spring weather while they are in flower.

As an early necessity, real or imagined, for a considerable number of both *Magnolia grandiflora* and *virginia* led to the first experiment. Cleaned of their oily pulp the seeds were stratified and germinated well the following Spring; transplanted first to small pots and then to three inch pots with no difficulty save that of keeping the main root from going directly to the bottom of the pot and then through the drainage hole, there was no final difficulty in getting them into the small nursery bed.

This success prompted the sowing of a few seed of *M. salicifolia*, not over five, and an equally small number of some of the colored forms of *Soulangiana*.

Thanks to a complete lack of care, all of the resulting seedlings of the latter died save one, which flowered this Spring and was well worth the waiting although it shamed the gardener for his past laxness. It is much like the beautiful *Alexandrinae*, but is several times darker both within and without. It remains, however, a two-toned flower.

But more interesting than either of these last two, are the plentiful self-sown or squirrel-soon seedlings that are beginning to appear over the garden. Both the aforementioned *salicifolia* and many plants of *stellata* are seeding freely in good years. The common gray squirrel of the neighborhood, never waits for the seeds to mature fully but chatter through the trees, cutting off the cones and chewing their way in to the seeds. Either some are

missed or fall from the squirrels' table, for there is now coming up a plentiful supply, that is plentiful in terms of magnolias, but modest enough as compared with the hosts of dogwood or tulip tree seedlings that infest the garden. As yet, I have not learned to find them in their moment of germination but there are seedlings from more than one year's seedfall.

Several were transplanted this year in soft growth, but with a good ball of earth and took their move without flinching.

It is possible that these seedlings may not make trees as swiftly as a layered branch, the method used for all my *stellatas*, but one can only feel that a plant has truly accepted the garden, when it begins to self-sow.

TAKOMA PARK, D. C.

#### *Fancy Leaved Caladiums*

Some time ago there was a note in these columns about the beauty of these plants in the summer window, particularly in reference to those forms, common enough now, which have almost white leaves with a fine pattern of deep green veining.

The plant which prompted this note has been living in the office window for over two years without a change of pot or soil and seem to find life still worth the effort. What we did not know at the time of that writing was that no matter what we might do, the plant would take a rest. This began about November in 1943 with a normal dying off of the leaves. Nothing was done about it except to let the pot stand dry. No record was made of the

time when the new leaves made their appearance in 1944. In the autumn of 1944, however, the dormant period made its appearance as usual and a little careful investigation showed that the tuberous roots looked firm and sound. During the leafless stage, water was given in just enough quantity to prevent the soil from becoming a hard bricklike mass. In January 1945, the first signs of new growth appeared and now in mid-January there are good single leaves from each of five noses. As a reward for all this there will be some good fertilizer applied as soon as we can remember, which gives additional proof of the value of all this as a long suffering window plant.

#### *Winter Boughs*

As soon as there have been heavy frosts one may cut branches of such trees and shrubs as make their flower buds well in advance, and these as every one knows will force in the ordinary house temperatures and give a flowering that is almost as good as that on their normal plants.

It has even been noted that nowadays when we do not have such high temperatures in our rooms, the flowers come on more slowly and last far better than in the old days when we "enjoyed" higher temperatures and doubtless drier airs.

#### *Zinnias*

Only two persons have written in about the possible participation in a test of zinnias. Unless other letters are received before February 10, this project will be abandoned.



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